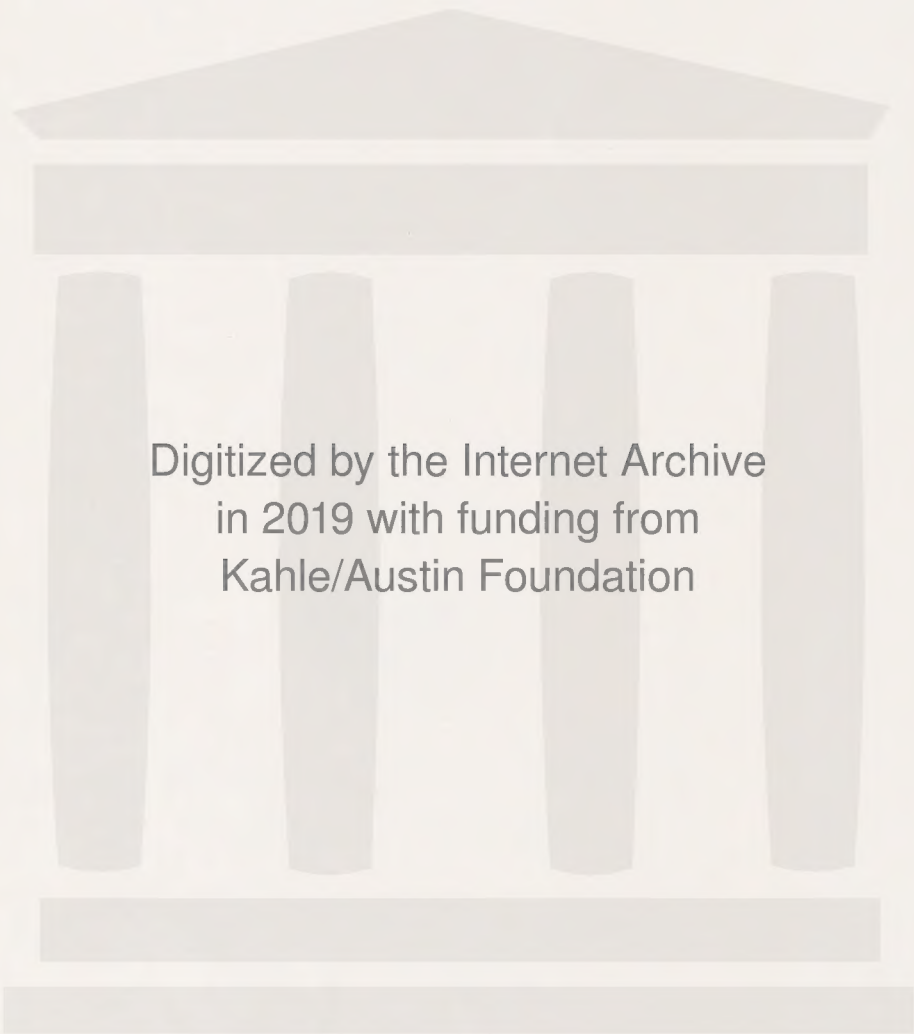


CONTRIBUTIONS

FROM THE

MUSEUM OF THE AMERICAN INDIAN

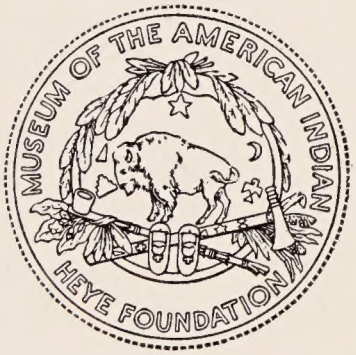
HEYE FOUNDATION

VOLUME X

THE INDIANS OF TIERRA DEL FUEGO

BY

SAMUEL KIRKLAND LOTHROP



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PREFACE

THIS account of the natives of Tierra del Fuego is the result of a three months' visit to the island, accompanied by Mr. J. Linzee Weld, during the summer of 1924–25. We studied Ona Indians at three settlements: one at the southeast corner of Lake Fagnano, one to the northeast of the same lake, and the third lying east of the Laguna de Pescados. Yahgan Indians were encountered at Tierra Mayor, Cambaceres bay, Gable island, and Puerto Mejillones on Navarin island.

Although the time available was short, aids to study were unusual. Thus, Cooper's "Bibliography" offered in a readily available form an accurate analysis of previous work, with an exception to be noted presently. Furthermore, the help of three intelligent white men—Messrs. Lucas and William Bridges and Fred. Lawrence,—all intimately acquainted with the Indian lore and languages, made it possible to procure accurate data with unusual celerity and facility. All the information thus obtained was checked by the Indians and vice versa, while just before I left the island Mr. William Bridges most kindly went over all my notes and vocabularies. Therefore I feel confident that they are detailed and accurate.

In planning my work, owing to the limited time available it seemed wise to concentrate on obvious and concrete problems which could be covered with reasonable thoroughness. Although the studies of Gusinde and Koppers [1] had not then appeared in print, I was told that they had worked chiefly on the religion, initiation ceremonies, folklore, and linguistics. Hence my most profitable course was to devote myself primarily to the material culture and technology. This decision was fostered by the fact that both tribes had been reduced almost to extinction by a recent epidemic of influenza, so that the older men who once took part in native rites had died almost without exception. Secondly, on Beagle channel a thorough examination of camp-sites was undertaken with a view of determining their nature and age so far as

[1] Consult the Bibliography in the appendix.

was possible without extensive excavation. In addition, customs and ceremonial practices were noted as opportunity offered. In preparing this account of the Indians I have followed my own notes even when at variance with previous studies; yet I have tried to incorporate enough material gathered by other observers to present a reasonably complete picture, at least of the material culture.

Tierra del Fuego is a land where the frontier traditions of hospitality still reign, so that acknowledgment of the help received seems stiff and formal in the light of the generosity and kindness to be found there. To the Bridges family is due primarily the success of our trip and also a deep debt of gratitude not only for technical and material aid but for kindly hospitality and sumptuous fare on the justly famous Estancia Viamonte. My mouth still waters when I think of poached wild-goose eggs on mutton steak or *calafate* pie with clotted cream. Mr. John Goodall, manager of the *frigorifico* at Rio Grande, was also a most kindly host. At Harberton Captain and Mrs. Sigurd Nielson, Mrs. John Lundberg, their many children, and Mr. Eric Fugellie not only offered us their unstinted hospitality but supplied every facility for travel and work. At Remolino Mr. Fred. Lawrence was both my host and a mine of information. The American and Belgian consuls at Punta Arenas, Mr. John Sharp and Mr. Charles Kwanten, the latter our traveling companion southward from New York, gave us most useful advice and helped us ship our collections northward. Mr. John Williams of Punta Arenas furnished important information. Mr. Thomas Constanduros and Mr. R. H. Oerton motored us across vast stretches of southern Patagonia, while Mr. John Hamilton most kindly allowed us to inspect his large and important archeological collection. I have space to mention but a few of the many who went out of their way to be helpful to us, but to all I give my most sincere thanks. Most particularly I am indebted to Mr. J. Linzee Weld for help and support under circumstances of many kinds and for genial companionship during many months in distant lands.

In this country, I wish to thank Mr. George G. Heye for the opportunity to take a most interesting journey and for making possible this publication. Mr. F. W. Hodge has both edited and aided in the preparation of the manuscript, as has also my wife. Prof. E. A. Hooton, assisted by Mr. Walter Cline and Miss Barbara Clark, have worked over all available data on somatology, while

Professor Hooton has most kindly written his impressions of the statistics thus prepared. The American Geographical Society has courteously allowed me to use the base-map prepared by that institution.

Of the illustrations, the drawings were prepared by Mr. William Baake, Mr. Louis Schellbach, and myself, and the maps were drawn by Mr. Schellbach and myself. Through the courtesy of Mr. L. W. Jenkins and the Peabody Museum at Salem I am able to illustrate two bows housed in that institution. To Mr. John Williams of Punta Arenas I am indebted for a picture of a Yahgan bark canoe. The great majority of the photographs were taken by Mr. J. Linzee Weld and myself in Tierra del Fuego and by Mr. Fred. P. Orchard in New York. Illustrations from other sources are acknowledged in their individual places.

S. K. Lothrop

New York
December, 1927

INTRODUCTION

TIERRA DEL FUEGO and the many adjacent islands are the southernmost inhabited land in the world, a distinction they have enjoyed from time immemorial. Discovered in 1520 by Magellan on the first hazardous voyage of circumnavigation, these wind-swept shores and their savage inhabitants have overwhelmed all European would-be settlers until the last quarter of the nineteenth century. Yet during the long years between discovery and colonization Fuegia did not remain isolated from outside contact, for its storm-vexed waters were traversed by later circumnavigators, by vessels engaged in the China and the Northwest Coast fur-trade, and by tall clipper ships carrying gold-seekers to California.

The Straits of Magellan, the Straits of Le Maire, and the passage of the Horn—all are peculiarly difficult for sailing ships, especially voyaging westward. Even today charts are incomplete and inaccurate; tides range from four to forty-two feet, so strong and vicious currents must be met; anchors, entangled in huge beds of unyielding kelp, may be lost; winters are long, dark, and cold. But above all, storms are common: the mountainous seas off Cape Horn, flowering with foam, and the violent prevailing westerly winds prove a stumbling-block for square-rigged vessels inherently slow in working to windward. "Our passage of the straits [of Magellan] had consumed fifty-one days, and had been effected without accident," writes a nineteenth-century traveler.[1] Owing to the conditions we have described, many a ship was cast ashore on Tierra del Fuego and other islands, there to be greedily plundered by the Indians.

Sometimes shipwrecked crews were slaughtered or otherwise maltreated. In retrospect it is but just to say that the land was then thickly settled in relation to its food supply, and the Indians resented any trespassing on their hunting rights, dealing a similar fate to one another under the same provocation. However, the natives of the Magellanic archipelago acquired a dreadful reputation

[1] Bourne (1853), p. 210.

for savagery and ferocity, which their uncouth appearance and hardiness no little augmented. Indeed even today Tierra del Fuego is regarded by many of the world's inhabitants as a strange and romantic land, peopled by unmitigated cannibals, inhospitable, forlorn, and barren. The very distance of Tierra del Fuego from the places where most of us live is a gap not easily overleaped by the mind, and indeed this gap is not only geographical, but racial and cultural as well.

The very fundamentals of Europe, racially and culturally, have for the greater part come directly from the Asiatic continent, so that historians in a philosophic vein have assumed that the march of civilization is constantly westward. *Ex oriente lux.* However, the current anthropological viewpoint is that man developed his peculiar physical and his primitive cultural attributes within the continent of Asia, and, thus primed with hitherto unknown powers to survive and to perpetuate the species, expanded in all directions with great rapidity. This expansion we may liken to the ripples spreading from a stone dropped into a pond, and of such ethnocultural waves the first settlers of Europe and the Fuegians mark the marginal extremes in opposite directions. In other words, until the application of the compass made the oceans a highway instead of a barrier, the western Europeans and the Fuegians were the most widely separated peoples in the world.

To students of human culture the Indians of Tierra del Fuego prove of unusual interest because with such tribes as the Tasmanians they are reputed among the world's most primitive inhabitants. Such isolated and backward peoples may exhibit, through cultural stagnation or degeneration, an early stage in the development of our own and of other complex civilizations. Moreover, the natives of Fuegia afford a clue as to the state of the first men to attain the shores of the Western Hemisphere.

GEOGRAPHY

The term *Tierra del Fuego* is loosely applied to the large archipelago lying south of the mainland of South America; more strictly the name is assigned to the main island, shaped like an irregular triangle. It measures about 240 miles along the south coast, the base of the triangle, and 170 miles from north to south.

South of the main island, separated from it by the narrow waters of Beagle channel, are three large islands (Gordon, Hoste, Navarin)

ESTANCIA SEGUNDA ARGENTINA

ESTANCIA VIAMONTE, NEAR NEW HARBERTON

THE PLAINS OF TIERRA DEL FUEGO

and a host of smaller ones (Gable, Picton, Lennox, New, etc.). Still farther south lie the Wollaston islands. Of these the southernmost is Horn island, terminating in the well-known Cape Horn. This isolated, sea-girt landmark faces the unquiet waters of the Antarctic ocean about seventy miles off the south shores of Tierra del Fuego.

Westward from the main island of Tierra del Fuego, across the Straits of Magellan, is the Brunswick peninsula, whose ultimate tip, Cape Froward, boldly marks the end of continental South America. Nearby are Dawson island, Clarence island, Santa Inés island, and others too numerous to mention.

The main island of Tierra del Fuego presents two types of topography: plains and mountains. The northern and eastern parts are a rolling plain, bare except for grass and small bushes, hummocked by glacial ice, of the same Tertiary formation as the Patagonian plains (pl. I). In the northwest the land rises abruptly and Mesozoic rocks appear as in the Pre-Cordillera range in South America. The western and southern coasts are almost completely isolated from the rest of the island by Admiralty sound, an arm of the sea, and Lake Fagnano, a freshwater lake lying in the same axis. Between these two submerged valleys and the Antarctic ocean pass the Andes, which, after running north and south through the continent, here bend eastward to disappear beneath the waters of the South Atlantic. Their peaks in Tierra del Fuego reach an average height of 3500 feet, but numerous passes exist at about the 2000-foot level, where snow-pockets linger even in summer (pl. II). Glaciers nourished by beds of eternal snow creep to the sea on the west and south.

The Magellanic archipelago then falls in three geographic entities, and each of these was occupied not long ago by corresponding kinds of Indians, speaking unrelated tongues. These divisions are: (1) Tierra del Fuego, occupied by the *Ona* and *Haush;* (2) the southern islands and the south shore of Tierra del Fuego (pl. III), peopled by the *Yahgan;* and (3) the western islands, where lived the *Alacaluf*. The Yahgan and Alacaluf were separated by Brecknock peninsula, a barren headland, sea-girt, with no protecting island fringe, and therefore exposed to the full fury of storms sweeping across the Pacific ocean.

CARTOGRAPHY

After the discovery, Tierra del Fuego fell heir to a veil of romantic mysticism spun long ago by Grecian philosophers and embroidered by scholars of the Middle Ages, for it became linked with the fabulous Terra Australis, the antichthon or counter-world of the ancients. Here, it was reasoned, dwelt the Antipodes, who walked foot to foot with the peoples of Europe, in a land where the trees grew downward and the rains and snows fell upward. With the coming of Christianity this postulated continent was banned by

FIG. 1.—Magellan discovering Tierra del Fuego.

the church,[1] for theologians were "scandalized by the suggestion that somewhere on the face of the sphere there existed a race of men who were not of the seed of Adam, and therefore outside the scope of human redemption."[2] Yet belief in this southern continent did not die, but lingered in men's minds. Dante placed his "Hill of Purgatory" in the center of a southern continent.

With the discovery of the Straits of Magellan an accomplished fact, European geographers believed that the Terra Australis of

[1] Augustine, De Civitate Dei, XVI, 9: "Quod vero et Antipodes esse fabulantur, id est homines a contraria parte terrae ubi sol oritur quando occidit nobis, adversa pedibus nostris calcare vestigia, nulla ratione credendum est."

[2] Payne, History of the New World called America, I, p. 45.

NORTH CREST OF THE PASS

SOUTH CREST OF THE PASS

FUEGIAN MOUNTAINS SEEN FROM THE HARBERTON–LAKE FAGNANO TRAIL

the ancients had emerged from the realm of fancy, and they showed Tierra del Fuego on their maps as part of a vast circumpolar antarctic continent, separated from South America by the straits Magellan discovered. The vagueness of their ideas is brought out by illustrations such as fig. 1, which pictures an elephant-bearing roc in flight over the masthead of Magellan's *Victoria*, while enticing mermaidens disport alongside in the waters called Pacific from a rare moment of tranquillity.

That the cartographers were at fault might soon have been suspected, for in 1526 one of the ships under the command of Loaysa ran southward along the east coast of Tierra del Fuego to "where it appeared there was an end to the land." [1] In 1540 one of the ships of Camargo sailed through the Straits of Le Maire and passed the winter somewhere on the south side of Tierra del Fuego, perhaps in Beagle channel, before returning to Spain. The name of this ship and of its captain is unknown, but part of the log has been preserved.[2] Neither of these voyages, however, attracted the attention of geographers. In 1578 Sir Francis Drake, having successfully passed the Straits of Magellan, was blown southward from Cape Pilar to the Wollaston islands, and the result of his unwilling course is reflected in a map published in Amsterdam by Cornelius Clarz in 1598. In 1616 the Dutchmen Schouten and Le Maire weathered the surf-ringed headland which they named Cape Horn, and, continuing their voyage across the Pacific, thereby definitely established that Tierra del Fuego is an island. When this voyage came to the attention of the Spanish crown, its importance was at once admitted, because it opened to the Far East a road over which Spain had no claim. Hence an expedition was despatched in 1619 under the brothers Nodal to gather exact information for their government. The resultant voyage was favored with fortune and the ships were the first completely to circumnavigate Tierra del Fuego, and also, I believe, the first to complete a voyage in Magellanic waters without loss of life. In 1643 another Dutchman, Brouwer, sailed along the eastern and southern coast of Staaten island. With this voyage the unreality of an antarctic continent near South America was fully established, yet the misconception, or at any rate the old

[1] Relación of Andrés de Urdanete, in Fernández de Navarrete's Colección de los Viages y Descubrimientos, v, p. 402, Madrid, 1837.

[2] Early Voyages to the Straits of Magellan, Sir Clements Markham, tr. et ed., Hakluyt Soc., ser. II, vol. XXVIII, London, 1911.

map plates, persisted in Europe until well into the eighteenth century. For instance, the map in the 1730 edition of Herrera's *Descripción* depicts Tierra del Fuego as extending indefinitely to the south.

Traditionally Tierra del Fuego received its name from the flickering lights of camp-fires seen by Magellan. A variant tale is that Magellan called it Tierra del Humo, "Land of Smoke," and that Charles V changed the name to Tierra del Fuego, jocosely remarking that where there was smoke there must be fire. However, I suspect that some idea of Dante's Purgatory underlies the name, because an active volcano (actually non-existent) appears on maps of the sixteenth, seventeenth, and even eighteenth centuries. I have before me a 1799 edition of Anson in which the map shows a "Volcan de Brandende Berg" in active eruption on the south coast of Tierra del Fuego.

HISTORY AND LITERARY SOURCES

In the preceding section we have mentioned several voyages, which were of importance in the development of geographical knowledge. This list might be greatly extended. Fagalde (1901) summarizes more than fifty voyages of scientific interest, completed before the end of the eighteenth century, but unfortunately with all ethnological data omitted. Much of this information may be gleaned, however, from De Brosses' *Histoire des Navigations* or Barclay's *The Land of Magellan.* Yet in truth it must be said that early contact with the natives was casual and brief, while the descriptions of ethnological significance apply usually to Indians north of the Straits of Magellan.

During the second half of the eighteenth century a general awakening to the importance of scientific investigations permeated Europe, with the result that various scholars were despatched to Latin America by the Spanish government. Fuegian waters were visited at this time by several surveying parties, and the basis of an accurate knowledge of the region was laid down. The general results of these investigations will be found in De Vargas Ponce's *Relación.* With the rise of Napoleon, however, Spain had no resources to spare for continuing this work, while the collapse of Spanish authority in the New World brought a definite end to it.

Great Britain had emerged from the Napoleonic wars as the dominant sea power. With growing colonial and commercial

HARBERTON

IMIWAIA BAY WITH BEAGLE CHANNEL AND NAVARIN ISLAND IN THE DISTANCE

SOUTH COAST OF TIERRA DEL FUEGO

interests in the Far East, the route thither by way of Tierra del Fuego became a matter of national importance, so that surveying expeditions under the command of Captain King and later Captain Fitzroy were despatched to Magellanic waters.[1] Captain Fitzroy brought back to England after his first voyage a Yahgan and three Alacaluf Indians. On his second voyage he was accompanied by Charles Darwin, the celebrated naturalist. The era of exact and scientific study of the natives of Tierra del Fuego was thus initiated.

Fitzroy's and Darwin's account of the Fuegians attracted wide notice in England, while the primitive society, destitution, and ferocity they pictured engendered a desire to Christianize that far-off people. The public in England were further roused by the fate of Captain Allen Gardiner and his companions, amateur missionaries who died of privation and exposure under tragic circumstances in 1851.[2] As a result the South American Missionary Society was organized and a mission station was set up on Keppel island (West Falklands). In 1856 this station was placed in charge of Canon G. Pakenham Despard, who brought with him a thirteen-year-old adopted boy, Thomas Bridges. Young Bridges soon learned to speak the Yahgan tongue fluently. In 1869 he returned to England, where he was ordained and married. The following year he founded at Ushuaia the first mission station on Tierra del Fuego. With him he brought as an assistant John Lawrence.[3] After many years' labor as a missionary Mr. Bridges retired, and in recognition of his services in opening up the country was given a land grant at Harberton by the Argentine government where he raised sheep. Mr. Lawrence received a similar grant at Remolino.

Bridges and Lawrence children were born on Beagle channel on the south coast of Tierra del Fuego, and were reared in close association with the Yahgan Indians. The Lawrence family, who still live at Remolino, today have an unsurpassed knowledge of Yahgan customs and linguistics. The Bridges brothers, as they grew up, began to explore to the north and east across the mountains, and finally secured for themselves a vast property on the east coast, today a flourishing sheep ranch known as the Estancia

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[1] See Narrative of the Surveying Voyages of H. M. S. *Adventure* and *Beagle*, 3 vols., London, 1839.

[2] For a full but sentimental account of this event see Jesse Page, "Captain Allen Gardiner," London, n.d.

[3] A full account of these events is given in the booklet by John U. Marsh, First Fruits of the South American Mission, London, 1873.

Viamonte. Their peregrinations through the heart of the island brought them in close contact with the Ona tribe. Indeed, they were the first white men to establish friendly relations with the Ona, and two of the brothers, Messrs. Lucas and William Bridges, have been formally initiated as members of the tribe by the *klókten* ceremony herein described.

We have related this story at some length because so much literature of ethnological interest depends on it. The elder Mr. Bridges has left among his reports to the missionary society a mine of ethnological information, while Mr. Lawrence's observations are also valuable. In addition Mr. Bridges has written several articles dealing directly with native life, published in various scientific journals, and he has left a monument to himself in what is probably the most intensive study of primitive linguistics ever carried out. Of this we shall have more to say.

Beside the contributions from the pen of Mr. Bridges, he aided greatly the success of the scientific studies made by the Argentine, French, and Italian governments in Tierra del Fuego during the last quarter of the nineteenth century. The important works of Hyades and Bove gain authority from this association. In recent years the Bridges' children, especially Messrs. Lucas and William Bridges, have sponsored practically all the information about the Ona tribe which has found its way into print. Indeed (without detracting from the merits of any writer) it may be said that the importance of most published data on the Ona varies according to whether or not the information was obtained from this generous and hospitable family.

After the Argentine government had established itself at Ushuaia a gold rush to Tierra del Fuego took place, which caused the coming of many undesirables. The result of this sudden contact with Europeans was disastrous to the native tribes.

The history of white settlement of the island emanating from the missionary post in the south is one of kindly dealing with the native races. Unfortunately the same cannot be said for the north. Sheep were introduced into the northern part of Tierra del Fuego in 1878, and trouble with the natives immediately ensued, for while the Indians had no objection to somebody stocking their game tracts, at the same time they maintained their right to hunt the "white guanaco" on lands which they regarded as their own. Naturally the hard-pressed pioneers of what has now become a

great industry objected to having their sheep killed, and they retaliated by killing the Indians.

Thus there soon sprang into being a class of professional head-hunters, recruited from the shepherds and miners, who received one pound sterling from the ranchers for each Indian head—man, woman, or child. The Indians, on foot and armed with bows and arrows, had little chance in the open plains against horsemen with rifles. Some of the atrocities committed in the '80's are recounted by Fuentes Rabe;[1] the writer heard from discrete and trustworthy sources many similar tales of brutality.

In 1891 a Salesian mission was established on Dawson island, and in 1893 a second station was set up at Cape Peñas and later transferred to Rio Grande. Although dedicated for three-quarters of a century to the eradication of troublesome Indians, the Government decided to stop the scandals arising from head-hunting by turning the Indians over to the missions. To this end troops scoured the country, rounded up the natives, and drove them like cattle to the mission stations. Families were mercilessly broken up. Strange foods caused sickness and implanted the belief that they were being poisoned. Unaccustomed European clothes and indoor quarters—as in so many well-intended missionary efforts—brought pneumonia and tuberculosis, and augmented the effect of their vitamin-deficient diet. Liquor and venereal diseases, against which Indians have surprisingly little resistance, both took their toll. Few indeed survived the "civilizing" process. Today the Dawson Island mission has been abandoned. The east-coast mission still existed in 1924, ostensibly to support two aged native women in idleness, in reality as a prosperous sheep ranch.

The record of the white settlers in Tierra del Fuego, with of course certain splendid exceptions, is not one to be reviewed with pride; not the Indians but Europeans have proved the greater savages. Missionary efforts, however well intended, have hastened the course of their neophytes to the grave. No more striking example can be adduced of the importance of anthropological and medical training for those who would change the religion and alter the habits of heathen peoples.

One of the chief ethnological results of the northern missions has been the establishment of the Museo Rejional "Mayorino Borgatello" at Punta Arenas. Unfortunately the ethnological

[1] 1923, II, 177–183.

section of this institution, especially rich in Alacaluf and Ona material, has never been adequately organized, so that in 1924 it was musty, moth-eaten, and unlabeled. A more permanent result of the Salesian efforts is the detailed linguistic study of Father José Maria Beauvoir. Also we must mention the most extraordinary photographic record of Alberto M. De Agostini.

A more detailed discussion of Fuegian anthropological literature by the present writer would be superfluous in view of the very thorough and critical study published in 1917 by the Reverend Dr. John M. Cooper, now of the Catholic University of America at Washington. In the appended bibliography I have listed those works to which reference is made in this volume and have added thereto all the titles I can find which have appeared in the last ten years in order to form a supplement to Father Cooper's admirable treatment of the subject.

THE INDIANS OF TIERRA DEL FUEGO

The natives of Tierra del Fuego were divided into three linguistic stocks or four tribal groups known to modern students as the Ona and Haush, Yahgan, and Alacaluf (pl. IV). These terms, of which variously spelled versions are found, come for the greater part from the Yahgan tongue because of the early missionary contact with that tribe. Haush is an Ona word. Alacaluf seems to have been employed by the group thus named to designate themselves and was also used by the Yahgan. The intertribal nomenclature is as follows:

English	Yahgan	Ona
Yahgan	Yámana [1]	Wówun (man) Aílen (woman)
Ona	Óna	Shílknam[n]
Alacaluf	Alacaluf	Aírro
Haush	Italum Óna	Haúsh

[1] In recent years several writers have used this word to designate the tribe in place of the older term *Yahgan*. Were the tribe to be named for the first time, current practice would dictate the choice of *Yamana*, but *Yahgan* has been the accepted name of the group for many years and is found in most ethnological literature; hence I have continued to use it. For similar reasons I have used *Ona* instead of *Shilknam*[n]. Likewise I have retained the tribal name *Alacaluf* in place of the recently introduced and no doubt more phonetically correct *Halakwúlup*. Such changes of terms long recorded in print form a stumbling-block to the general reader and at the same time contribute little or nothing to the specialist.


LEGEND
ONA
HAUSH
YAHGAN
ALACALUF
FOOT INDIANS
CANOE INDIANS
TEHUELCHE INDIANS
Straits of Magellan
ATLANTIC OCEAN
PACIFIC OCEAN
CHILE
ARGENTINE
PUNTA ARENAS
San Sebastian Bay
Useless Bay
Brunswick Peninsula
Dawson Island
Admiralty Sound
Clarence Id.
Brecknock Peninsula
Rio Grande
Laguna de Pescados
L. Fagnano
Polycarpo Cove
USHUAIA
Sable Id.
HARBERTON
BEAGLE-CHANNEL
Gordon Id.
Navarin Island
Picton Id.
New Id.
Lennox Id.
Londonderry Id.
Hoste Island
New Years Sd.
False Cape Horn
Wollaston Id.
Cape Horn
Straits of Le Maire
Staten Island
72°
71°
70°
69°
68°
67°
66°
65°
64°
52°
53°
54°
55°
56°

The Ona and the Haush spoke related dialects and occupied the interior of the main island of Tierra del Fuego; they are often called the Foot Indians because of their manner of living. The Yahgan frequented the south coast of the main island and the islands to the south; the Alacaluf formerly lived at the western end of the Straits of Magellan but have moved northward to Ración sound. The habitat of each tribe as it was half a century ago is shown in pl. IV.

No census of the indigenous population in the old days was ever taken, but from several different estimates the numbers of each tribe seventy-five years ago were approximately:

Ona, 3600	Yahgan, 2800–3000
Haush, 300	Alacaluf, 3500–4000

Since at least half of the Alacaluf lived north of the Straits of Magellan, the total native population of Tierra del Fuego and the adjacent islands can scarcely have been more than 9000.

At the time of the writer's visit (1924–25) the Indian population, including mixed-bloods, was approximately:

Ona, 60–70	Yahgan, 40–50
Haush, 2– 3	Alacaluf, 150

Of the Alacaluf only two were seen south of the Straits of Magellan, as they now live far to the north, for the greater part in the vicinity of Ración sound. The figure for their numbers is the estimate of the Rev. John Williams of Punta Arenas.

Later in the same year (1925) an epidemic of measles ravaged Tierra del Fuego. What happened to the Yahgan I do not know, but Mr. William Bridges wrote me that more than twenty adult Ona and an unknown number of children had died. With the exception of a few mixed-bloods the Indians of Tierra del Fuego are probably extinct.

Because the writer saw little of the Alacaluf and Haush, it is principally of the Ona and Yahgan we shall speak below. Before beginning a detailed description we shall discuss their environment and physical peculiarities, and shall list the features of their culture.

CLIMATE

Tierra del Fuego lies between 53° and 56° south latitude, corresponding to the position in the northern hemisphere of the Aleutian islands, southern Labrador, or the central part of Great Britain.

The shores of Tierra del Fuego are washed by an Antarctic current which ranges in temperature during the year between 40° and 50° Fahrenheit. Hence the land temperature is low, but there are no great extremes.

Let us examine some figures. At Ushuaia, the southernmost town in the world, according to Argentine government reports the mean summer temperature is 50° Fahrenheit, while the winter mean is 25°. In summer the thermometer rarely registers above 65°, yet in winter the mercury seldom falls below 10°. At Punta Arenas on the Straits of Magellan the summer mean is 51° and the winter mean is 28°. Although I have no figures to support the assertion, I believe the eastern side of the island is colder than the western.

As to rainfall, at Ushuaia it amounts to 24.8 inches annually, while in Punta Arenas there are 16 inches, to which must be added 14 inches of snow. In the east rain is more frequent, and about 50 inches are said to fall on Staaten island annually. It is quite surprising that the comparatively light rainfall of Ushuaia and Punta Arenas should foster the growth of forests almost tropical in their density. The controlling factor probably is the feebleness of evaporation, owing to low average temperatures.

The figures cited for rainfall and temperature show that extremes are absent from Tierra del Fuego, yet they do not give a just picture of the climate as it affects human life. For instance, the writer witnessed snowfalls at sea-level in December, January, and February, the three summer months. Two of Captain Cook's men were actually frozen to death near Good Success bay on the night of January 16, 1769.[1] To be sure, Cook's men may be criticized with some justice for allowing night to overtake them in a strange land at a place where no firewood was nearby; yet the incident shows that even in the Fuegian summer one must prepare to face cold. In winter, snow piles deep in the wooded portions of the island, but on the open plains it often turns to sheet-ice.

In some years the frosts never leave the ground in Tierra del Fuego. Grains never ripen except occasionally in the vicinity of Porvenir on the north coast.

Owing to the ecliptic orbit and inclined axis of the earth, summer is eight days shorter and winter eight days longer in the southern than in the northern hemisphere. The upper photograph in pl. II

[1] See Hawkesworth, II, chap. IV.

was taken at an elevation of 2020 feet on December 22. It shows midsummer snow-pockets above the tree-line at an elevation of only 1800 feet. At 3000 to 3500 feet one reaches fields of eternal snow from which numerous glaciers descend to the sea. Glaciers reach sea-level not only in Tierra del Fuego but for hundreds of miles northward on the west coast of Chile, as far in fact as the Gulf of Peñas, which corresponds in latitude to the position of Duluth, Seattle, Budapest, or Geneva. This is about 1250 miles nearer the equator than the most southerly coastal glacier in Norway.

In addition to cold, wind is an unfavorable factor on human life in Tierra del Fuego. Cape Horn gales are world famous; squalls are sudden and savage; even the prevailing westerly winds blow with enough vigor to make life in the open unpleasant. To the Foot Indians of the interior the winds were more disagreeable than dangerous, but to the Canoe Indians they were fraught with peril. Not only might treacherous williwaws sweep from the mountains to overwhelm their bark canoes, but prolonged gales might isolate them on barren islands for days or even weeks till they starved to death.

The picture we have painted of the Fuegian climate is a most unpleasant one. In the mind of the writer it is mitigated by the memory of warm summer days with motionless air and brightly shining sun. On such days sea-bathing is no more uncomfortable than on the coast of Maine or the English channel. However, one must pick a place where the incoming tide sweeps across sun-warmed sands.

The most unusual aspect of the Fuegian summer climate is the rapidity with which it changes. At one moment it will be a clear bright day with no wind, while half an hour later it may be blowing a gale and snowing. This summer climate—except for the rapid changes—is not unlike a New England October, blessed with "Indian summer" and not infrequent frosts. It is bracing and invigorating, however, and in Tierra del Fuego causes both men and animals, domestic or foreign, to grow robustly.

When the climate of Tierra del Fuego has been pictured, the most unfavorable aspect of the environment on human beings has been described, for the flora and fauna both supply many economic assets to the inhabitants.

FLORA

The northern and eastern parts of Tierra del Fuego, as we have said, are open rolling plains covered with short grass and small shrubs. South of the Rio Fuego small clumps of trees surrounded by grass-lands are encountered. These clumps gradually increase in size and height until they finally form a solid forest broken only by *pantanos*, or peat-bogs, which are found in the valley bottoms and above the tree-line on the mountainsides. All the slopes of the Andes up to an elevation of 1400 feet or more, the south coast, and the nearby islands are covered by forest. And these forests

FIG. 2.—Fuegian forest. (From Alberto De Agostini, *I Miei Viaggi nella Terra del Fuoco.*)

are surprisingly dense, damp, luxuriant, and impenetrable (fig. 2). Fostered by snow-fed streams and mists, dampness encourages the growth of lichens, mosses, fungi, and orchids. Travel through virgin woods is impeded by fallen trunks, thick underbrush, and mud, but, owing to the relative absence of spiny growth, is not so disconcerting as in the tropics.

The trees and bushes of prime economic use to the Indians we list below. The various purposes to which they are put we shall discuss together with the manufacture of the articles used by the Indians. These trees and shrubs are:

TABLE I.—ECONOMICALLY IMPORTANT FLORA OF TIERRA DEL FUEGO

ENGLISH	SPANISH	LATIN	ONA	YAHGAN
beech	ñire	Nothofagus antarctica	char^{n}	kurtúran
beech	coiguë	Nothofagus betuloides	yínyon	súschi
beech [1]	roble	Nothofagus pumilio	kawaltchénk	hámo
pickwood	leña dura	Maytenus magellanica	haíko [2]	aíaku [2]
Winter's bark	canelo	Drimys winteri	chóel	ukúshta
cypress	ciprés	Libocedrus tetragona	——	——
holly	chaura	Pernettya mucronata	yah^{n}	gus
barberry	calafate	Berberis buxifolia	metq	úmash
barberry	calafate	Berberis ilicifolia	——	chélia
fashine	——	Chiliotrichum amelloideum	góorrh	yéya
——	ciruelillo	Embothrium coccineum	——	mŭ'gu
——	——	——	shíterhén	upúsh
grass	juncos	Juncus magellanicus	tai	mápi
fungus	——	Cyttaria darwinii	yóken	awachiq

Although the Indians of Tierra del Fuego subsisted chiefly by hunting and fishing, they did not overlook the food value of various berries which grow on the island. Of these the most easily obtainable is the barberry, which flourishes everywhere. It is a variety different from the red-berried barberry (*Berberis vulgaris*) found in northern climes, for it looks and tastes not unlike our blueberry and makes an excellent stewed fruit. Then there is the red berry of an arbutus, similar to our cranberry in size and shape but rather tasteless; also what is locally called a "strawberry" (*Rubus geoides*) looks like a raspberry, tastes like a blend of peach and papaya, and grows half underground.

The Ona are said to collect grass-seeds (called *tai*) which they grind to a paste and eat, but this I did not see.

There are ten or more kinds of fungi on Tierra del Fuego, which, according to Rev. Thomas Bridges (1886), were eaten at various times of year by the Yahgan. Of these the most important both to the Ona and the Yahgan was a brilliant orange growth (*Cyttaria darwinii*) found on beech trees. When ripe, it is mucilaginous and rather insipid. The Yahgan still dry this fungus on rods and preserve it for winter use (fig. 3). Darwin remarks that since

[1] This tree is an evergreen.
[2] Word-borrowing is suggested by the similarity of Ona and Yahgan terms.

the introduction of the potato to New Zealand, Tierra del Fuego is the only part of the world where cryptogamic plants form the chief vegetal diet.

However, the Fuegian Indians failed to utilize many native food plants of value, such as wild celery, two kinds of cress, wild seapink, wild parsnip, scurvy grass, and mushrooms.

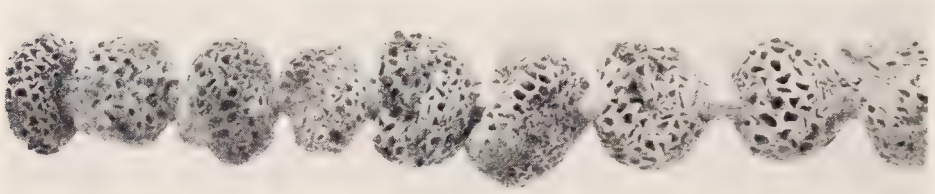

FIG. 3.—Fungi dried on a rod for winter use. Length, 8 in. (14/2279)

No description of the flora of Tierra del Fuego can omit mention of the gigantic kelp (*Fucus giganteus*) which almost everywhere fringes the coasts. Though the stems are not thick, they often exceed a hundred feet in length. Darwin[1] picturesquely writes: "I can only compare these great aquatic forests of the southern hemisphere with the terrestrial ones in the intertropical regions. Yet if the latter should be destroyed in any country, I do not believe that nearly so many species of animals would perish, as, under similar circumstances would happen with the kelp. Amidst the leaves of this plant numerous species of fish live, which nowhere else would find food or shelter; with their destruction the many cormorants, divers, and other fishing birds, the otters, seals, and porpoises, would soon perish also; and lastly the Fuegian savage, the miserable lord of this miserable land, would redouble his cannibal feast, decrease in numbers, and perhaps cease to exist." The kelp forms an excellent breakwater and mooring for canoes, but it is an impenetrable barrier to swimmers and has prevented many unfortunate occupants of overturned canoes from safely reaching the shore. Its appearance on the surface of the water may be seen in pl. III, top, and pl. XI, top.

FAUNA

From the Indian point of view what made Tierra del Fuego a suitable land for habitation was the edible fauna, which in turn

[1] 1838, p. 303.

depended on the flora, especially the grasses on land and the kelp along the shore.

Of the land animals first place in economic importance falls to the guanaco, one of the four New World varieties of camel (fig. 4). The guanaco is closely related to the llama of Peru, but, whereas the llama is found only as a domestic animal, the guanaco has never been successfully domesticated, although easily tamed. The guanaco has been succinctly described as having "the neigh of a horse, the wool of a sheep, the neck of a camel, the feet of a deer, and the swiftness of the devil." [1] In Tierra del Fuego, guanaco attain a much larger size than in Patagonia, while on Navarin island they are nearly as large as a cow.

FIG. 4.—Young guanaco.

Material culture of the Ona is based on the guanaco, and the importance of this animal in their economic life is emphasized by the highly specialized vocabulary used to describe it. Fur from new-born guanaco is exceedingly soft, and the Tehuelche of Patagonia used it for robes. The Fuegians, however, confronting greater cold, made their robes from skins of the adult animal. From guanaco-hide the Ona made their windbreaks (which served as houses), storage-bags, water-bags, and thongs; from the forehead they fabricated caps; from the sinews they made twine; from a leg bone they manufactured a chipping tool; from the hocks they fashioned moccasins. Guanaco meat, rather dry, stringy, and

[1] Musters, p. 127.

tasteless to our notions, formed the principal meat diet of the Foot Indians. Wool was the only asset of the guanaco not utilized by the Ona, for lacking knowledge of weaving and ability to organize in large numbers, they never rounded up the wild guanaco to shear them, as was done to the llama on a large scale under the Inca dynasty in Peru.

For the Ona, second place in importance among the land animals falls to the fox (Ona: *uash*), one of the two varieties of which grows to an unusual size. I have been told that on occasions of great scarcity the foxes in Tierra del Fuego have combined to form packs in the fashion of wolves, and it is then well for a man to avoid them. Fox was sometimes eaten by the Ona, and the skin was occasionally used for robes, if guanaco were scarce. Two kinds of bags (*hási*^{n} and *kólwe*) found in every Ona household were made of fox-skin.

A small burrowing rodent (*Ctenomys fueginus*), known in Spanish as the *tucotuco* or *cururo*, was eaten by the Ona, who dug up the burrows with sticks. In places large areas of the Fuegian plains,

TABLE II.—FUEGIAN FOODS[1]

	ONA	YAHGAN
animal	guanaco***** fox (two kinds)** tucotuco seal (four kinds) whale rat (rare)	seal*** porpoise** whale* } oil stored otter (chiefly in west) guanaco (only in east)
fish	chiefly eels**	many kinds***
shellfish, etc.	mussels* limpets crabs	mussels***** limpets* conchs crabs* sea-urchins*
birds (chiefly in summer)	goose (four kinds)** duck (five kinds) cormorant*	goose* duck gulls** penguin* cormorant* } and their eggs**
vegetal (in summer)	fungus (several kinds) berries (three kinds) grass-seeds	fungus* berries

[1] Putative relative importance of foods is indicated by asterisks.

undermined by this animal, recall the gopher burrows in western North America.

The Fuegian dog is not known in a wild state, and today it is extinct, although much blood of the native breed must run in the veins of the innumerable sheep dogs and hounds to be found on the island. In height the native dog ranged from 11 to 20 inches. Their ears were pointed, muzzles sharp, and skulls broad. The markings were black and white, with tan running-gear. Like most Indian dogs they lived largely on such garbage as they could pick up around the encampment, but in times of plenty they were given meat or mussels by their masters. Also occasionally they might pull down a guanaco and enjoy a square meal before the arrival of the hunter, as illustrated in the legend of Kuanip, presented later.

Of the sea animals, the four kinds of seal found in Fuegian waters formed the principal meat diet of the Yahgan. Not only did they eat the seal, but they used its hide for capes, moccasins, house-tops, and thongs. It is surprising they never invented a hide boat, which would have been much less perishable than their bark canoes. The Haush also ate a great many seal, and the Ona ate seal but did not specialize in its pursuit.

Otter of three kinds, one living on land and two in the sea, were prized by both Yahgan and Alacaluf, who used their skins for clothing. Both these peoples attacked porpoises, and at times, when some innate instinct assured them of good weather, they pursued them far into the open sea.

To the Fuegian tribes whale was a great delicacy, and by all accounts this leviathan existed in large numbers in Fuegian waters until recently. Sometimes the Canoe Indians ventured to attack whales that had blundered into shallow water, but usually they were secured dead on the beaches. These were gala occasions, and feuds and animosities were forgotten as great numbers gathered to gorge themselves on the often putrid, diseased, and stinking flesh. When satiated, the Yahgan sometimes buried a meat supply far under ground where, were there frost, it might be preserved for many months. This custom recalls the burying of salmon on the northwest coast of North America, where the decomposed fish was mixed with oil and eaten with gusto.

Fuegian waters abound in fish, both large and small, which were eaten by all the tribes. The Ona took fish from pools at low tide,

while the Yahgan speared them in deep water or drew them with bait to the surface where they could be seized by hand. Failure to utilize fully the fish supply must be regarded as a great deficiency of the Fuegian economic system, a lack which might have been overcome by the invention of fish-traps and the fish-hook.

Both Foot and Canoe Indians ate great numbers of mussels, conchs, and limpets, and ancient camp-sites often are indicated by large piles of shells. This is especially true in the Yahgan country, because all their camp-sites were on the beach where shellfish were easily obtained.

The Canoe Indians ate a species of sea-urchin some three or four inches in diameter, and also crabs. Of these the most succulent is a giant spider crab (*Lithodes antarctica*), so good to eat that today it is canned and exported from Punta Arenas.

Birds abound in Tierra del Fuego. Many, to be sure, have a fishy taste, but to a palate not over-delicate they offer an abundant food supply. Among birds of economic use to the Indians we should mention four kinds of goose and five kinds of duck. The upland goose and the pin-tail duck are the best eating. Also there are many kinds of gull (including the albatross), penguins, vultures, eagles, doves, plover, and, curiously enough, a paroquet and a hummingbird.

As to the environment in general, it is much more suitable for supporting human life than is realized by those who have not visited Tierra del Fuego. The public mind, we believe, is unduly impressed by the romantic place of the island in history, by adventurous accounts of midwinter weatherings of the Horn in sailing vessels, by modern travelers elated at the length and labor of their journeys. Glaciers descend to the sea in Tierra del Fuego, but the land also nourishes orchids, mushrooms, paroquets, hummingbirds, and butterflies. Prosperous sheep ranches with their comfortable and commodious houses and their well-stocked vegetable and flower gardens show that European standards of living can be achieved on the island. And these settlements, were over-sea transportation to be cut off, could probably maintain themselves better on local resources than most European settlements in the tropics.

The climate of Tierra del Fuego, to be sure, is severe, but it is not so extreme as inhabited regions of Europe, Asia, North America, and Greenland. Agriculture within certain limits is entirely

feasible. Timber of many kinds is available—and with this we may contrast the condition of certain Eskimo who must rely on driftwood for some of their manufactures and on oil for their heat. Furthermore, animal foods are found by land and by sea in sufficient quantities to support a relatively large population of a non-agricultural, hunting class.

Clearly then some of the very primitive features we shall describe were not forced on the natives by their environment, but rather were the result of lack of ingenuity or of inertia.

CULTURE STATUS

Fuegian culture ranks among the most primitive that has been known within the limits of recorded history. To emphasize this statement we subjoin a list of all the articles and materials observed among the Ona and the Yahgan. This list at first glance seems fairly long, but one must consider that it embraces not only the individual but a complete family including both sexes and all ages. Further, it includes not what appeared for any given occasion but everything with which any Indian normally came in contact during an entire lifetime. In contrast, if the reader will list the objects he makes use of between bed and breakfast, he will find that in half an hour of daily routine he has utilized more articles and more materials than a Fuegian ever manipulated.

More justly, however, we should compare the Fuegian culture with the status usually found among Indian hunting tribes. On this basis we find that the Fuegians lacked such simple implements as the drill, the ax, the spear-thrower, fish-hooks, and cooking containers. They had no pottery, no weaving, no method of softening skins except by use, nor had they more than a rudimentary art of painting, while sculpture was beyond them. They rarely stored food against a time of stress. Their games, their social organization and ceremonies, were but slightly developed. Religion was largely a negative affair, for they indulged less in religious acts probably than any people known in the world in recent times. Animistic beliefs they had, but scarcely a trace of fetishism has been noted, and of totemism—so widely developed throughout the Americas—there is not a vestige.

In estimating this list it must also be borne in mind that the Ona and Yahgan cultures have intermingled especially along the frontier. In some instances, such as the initiation ceremonies or

the method of fire-making, the borrowing group made the introduced feature completely their own. But often the borrowed trait never became characteristic, and its use was only local and occasional. If these acquired features are subtracted the cultural poverty of each tribe is greatly intensified.

SUMMARY OF FUEGIAN MATERIAL CULTURE

Ona	Yahgan
Clothing	
robe	cape
slip	——
pubic covering	pubic covering
moccasins	moccasins (rare)
leggings (rare)	leggings (rare)
hunter's cap	——
shaman's cap (rare)	shaman's cap (rare)
——	mittens (rare)
Ornamentation	
anklets	anklets (rare)
wristlets (rare)	wristlets (rare)
necklace	necklace
paint	paint
tattooing	——
House	
skin windbreak	skin-covered dome of saplings
log tipi (rare)	log tipi (rare)
Transportation	
pack harness	canoe
walking-stick	paddle
——	bailer
——	mooring rope
Camp Equipment	
flint and pyrites	flint and pyrites
fire-tongs	fire-tongs
grease stone	grease stone
skin water-bag	bark bucket
——	shell cup
skin storage-bags	skin storage-bags
gut storage-bags (rare)	gut storage-bags
——	kelp storage-bag

basket (one kind)	baskets (three kinds)
frame cradle	——
dog leash	——
——	feather broom (recent?)
comb	comb
——	face-painting stick

Tools

knife	knife
flesh-scraper	flesh-scraper (rare)
wood-scraper	wood-scraper
sharpening stone	sharpening stone
awl	awl
chipping tool	?
stone shaft-polisher	?
skin polisher	pumice
——	barking tools (two kinds)

Weapons and Hunting Equipment

bow and arrow	bow and arrow (rare)
spear (rudimentary)	spears (five kinds)
sling (rare)	sling
——	club
bird-snare	bird-snare
net (rare, two kinds)	net (rare)
——	grass dip-net
——	fish-line
bark torch	bark torch

Games

ball	ball
circular grass target (rare)	——

Religious and Ceremonial Paraphernalia

masks	masks
feather headband	feather headband
kelp-goose down headband	kelp-goose down headband
——	painted sticks
——	painted thong
——	guanaco-hide headband
——	tickling stick
——	ceremonial spear

Materials

wood	wood
sinew	sinew
skin	skin
stone	stone
bone	bone
whalebone (rare)	whalebone
——	kelp
grass	grass
feathers	feathers
——	pumice
white clay	white clay
red burnt earth	red burnt earth
charcoal	charcoal
pitch (post-European)	——
iron (post-European)	iron (post-European)
glass (post-European)	glass (post-European)

PHYSICAL TYPE

The writer engaged in no anthropometric investigation in Tierra del Fuego, but certain measurements are available by which the physical types there to be found may be determined. The most important study yet published is that of Hyades (1891) on the Yahgan prepared in coöperation with Deniker, a work surprisingly sound in method considering how long ago it appeared. A series of measurements on the Ona taken many years ago but printed recently (1927) by Dr. Lehmann-Nitsche is also of prime importance. Somatological data collected by Gusinde and Koppers in recent years is beginning to appear in print, but with a single exception it has not been possible to obtain copies in time to incorporate the material here. Other studies of smaller scope are available and have been listed by Cooper (1917, pp. 138–140) and Dixon (1923, pp. 454–455). Even when concentrated into a single group, Fuegian somatological material is not abundant.

Primary division of the Indians of Tierra del Fuego into groups, Foot Indians and Canoe Indians, is made on cultural grounds. This classification might also be based on physical type, and, in case of the Foot Indians, on linguistic relationship. As with the cultural evidence, physical data on the Alacaluf and Haush are so scanty that we shall confine our discussion to the Ona and the Yahgan.

To casual observation the Ona impress one by their great height, their barrel-like chests, their splendidly upstanding carriage, and their patent strength and endurance (figs. 7 and 37). Their hair grows abundantly on the head, but sparsely on the face and body, from which in the old days they plucked it with a pair of mussel-shells. Their feet, ankles, hands, and wrists are surprisingly delicate in proportion to their great stature. A peculiar physical characteristic which has escaped comment is the not infrequent presence of purple-black patches like birthmarks on the skin. These may appear on any part of the body, but are especially common on the base of the neck, where an example was noted among the Yahgan. As the Indians are sensitive about such nævi, examination is difficult.

FIG. 5.—Yahgan Indians. (After Hyades and Deniker.)

In sharp contrast to the Ona the Yahgan are exceedingly short. Their stature approximates closely that of the Alacaluf, among whom Hyades (1891, p. 120) found an average of 157.4 for eleven men and 148.8 for six women. All visitors to Tierra del Fuego have commented on the corpulence of the Yahgan in relation to their slender legs, a characteristic attributed to long hours spent

in the cramped positions compulsory in their canoes. The eastern Yahgan, it is asserted, had better developed legs than the other groups because they hunted more frequently on shore. Like the Ona, the Yahgan had little hair on their faces and removed this growth with mussel-shell pincers. It is stated [1] that on the arrival of the French scientific expedition in 1883 the Yahgan mistook the beards of the Frenchmen for tobacco, and in that belief tried to pull them off.

We should also mention a curious Yahgan anomaly noted by Hyades and Deniker (1891, p. 167) that these Indians tended to put on fat with unusual rapidity in times of plenty, and were able to live on this reserve when food was scarce. Yahgans of age before the white settlement resulted in a less erratic food supply exhibited skin hanging in folds on underfed individuals (fig. 5). The ability to store unusual amounts of fat, most developed in modern races among the Hottentot, has been thought a survival of a hibernating stage in the development of man. Its existence in Paleolithic Europe is deduced from steatopygous figurines among the most ancient carvings produced by human hands. Anatomically, Hyades and Deniker explain this feature by long intestines coupled with a small stomach, leading to rapid and frequent digestion of small amounts of food. The Yahgan stomach was found to contain 1800 cc. as against 3700 cc. for Europeans, presumably Frenchmen, while the Yahgan intestines were six times the length of the body as compared with five times the length of the body in Europeans. These observations and conclusions, it may be mentioned, are not in accord with more recent investigations which reveal a correlation between long intestines and a vegetal diet.

We can say little about the physique of Haush and Alacaluf. the former clearly were related to the Ona, while the latter were short in stature like the Yahgan.

Turning to more exact data, in the accompanying table we give statistical constants for the Ona and the Yahgan, based on all available material. For the preparation of this table I am indebted to Prof. E. A. Hooton of Harvard University, to Mr. Walter Cline, and to Miss Barbara Clark. I am further indebted to Professor Hooton for the subjoined comment.

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[1] Capt. Le Clerk in the *South American Missionary Magazine*, 1884, p. 58.

TABLE III.—STATISTICAL CONSTANTS FOR THE ONA AND THE YAHGAN

		Number of Cases	Mean	Standard Deviation	Coefficient of Variation	Range
Stature						
Onas	Adult Males	25	175.44± .64	4.71±.45	2.68±.26	168–186
Yahgans	" "	67	158.10± .43	5.23±.30	3.31±.19	146–169
Onas	Adult Females	34	159.24± .58	5.02±.41	3.15±.26	149–169
Yahgans	" "	56	147.54± .34	3.82±.24	2.59±.17	141–157
Head Length						
Onas	Adult Males	22	198.77± .51	3.57±.36	1.80±.18	192–205
Yahgans	" "	27	190.04± .87	6.72±.62	3.54±.32	175–207
Onas	Adult Females	30	190.37± .60	4.86±.42	2.55±.22	182–200
Yahgans	" "	26	180.38± .74	5.59±.52	3.10±.29	168–193
Head Breadth						
Onas	Adult Males	22	158.91± .48	3.31±.34	2.09±.21	152–164
Yahgans	" "	27	150.78± .64	4.95±.45	3.29±.30	145–163
Onas	Adult Females	30	153.20± .62	5.06±.44	3.30±.29	142–163
Yahgans	" "	26	142.46± .35	2.63±.25	1.85±.17	138–147
Length-breadth of head						
Onas	Adult Males	22	80.05± .32	2.20±.22	2.75±.28	77–85
Yahgans	" "	26	79.27± .37	2.78±.26	3.51±.33	74–88
Onas	Adult Females	30	80.57± .34	2.77±.24	3.43±.30	74–86
Yahgans	" "	26	79.04± .34	2.56±.24	3.24±.03	73–84
Nasal Index						
Onas	Adult Males	22	71.18±1.00	6.93±.70	9.73±.99	58–84
Onas	Adult Females	30	70.30± .79	6.45±.56	9.17±.80	60–87
Facial Index						
Onas	Adult Males	20	85.50± .75	4.95±.53	5.78±.62	78–97
Onas	Adult Females	30	85.80± .53	4.30±.37	5.01±.44	75–91

NOTE ON THE ANTHROPOMETRIC CHARACTERS OF THE YAHGAN AND THE ONA

By Prof. E. A. Hooton

The statistical constants in the accompanying table are derived from the data of Lehmann-Nitsche and Gusinde in the case of the Ona, and from the data of Hyades and Deniker, Bove, and Hahn in the case of the Yahgan.

The difference in size between these adjacent tribes, both of which live almost exclusively on animal food, is prodigious. Twenty-five adult male Ona yield a mean stature of 175.44 cm., which is

probably the highest to be found among American Indians. It is, of course, possible that the neighboring Patagonians equal this figure. On the other hand the stature of 67 adult male Yahgans is only 158.10, which ranks them among the shortest of American Indian groups. Even more remarkable than the means are the standard deviations and coefficients of variation for stature. In a series of 540 full-blood Sioux, Sullivan [1] found a standard deviation of 5.64 cm. and a coefficient of variation of 3.27 per cent. The corresponding figures are somewhat lower in the Yahgan and significantly lower in the Ona. Davenport [2] lists the standard deviations of stature for eight samples of males of military age of various nationalities. All of these standard deviations exceed 6 cm. It is then apparent that the variability of the Fuegians in stature is low.

It may also be observed from the table that the variabilities of the short Yahgan with respect to stature are somewhat higher than those of the tall Ona. The reverse is true however in the female series.

The head lengths of both groups show similar statistical features. The mean of the dimension for Ona males, 198.77 mm., is the largest known to the present writer, and the variability of this measurement is wonderfully small. The Yahgan too have long heads, but are much more variable than the Ona in this respect. Similar observations apply to the head breadth.

The means of the cephalic indices indicate a predominance of mesocephaly in both groups. The Ona show slightly higher means than the Yahgan. Here again variabilities are extraordinarily low. The Ona range in males is from 77 to 85, and the Yahgan from 74 to 88. In case of the females the ranges are: Ona 74–86; Yahgan 73–84. The variabilities of the female groups with respect to this index do not differ significantly.

Data for the nasal and total facial indices are available only for the Ona series. In both of these cases the standard deviations and variabilities are rather large. All varieties of nasal and facial proportions occur. One expects, however, to find a large measure of variability in both of these indices; first, because of the extreme difficulty in locating the nasion point from which both nasal height

[1] L. R. Sullivan, Anthropometry of the Siouan Tribes, *Proc. Nat. Acad. Sci.*, VI, no. 3, pp. 131–134, Mar. 1920.

[2] Charles B. Davenport and Albert G. Love, Army Anthropology, p. 113, 1921. *The Medical Department of the U. S. Army in the World War*, XV, Statistics, pt. 1.

and facial height are measured; second, because of age changes in the individual which affect these parts. The length of the nose increases with age and the length of the face tends to diminish with wear and loss of teeth. Nevertheless it would appear that these indices in the Ona group by their dispersion indicate a lack of homogeneity of the group when compared with the measurements and indices previously considered.

It is proposed to consider here the problem of Ona and Yahgan anthropometry only so far as deductions may be made from the accompanying table and from information as to the environmental factors which seem to be important. First of all it is apparent that the Yahgan as a group are less homogeneous than the Ona, particularly in the case of the males. How may this difference in variability be explained? The conditions of diet, occupation, climate, etc., are somewhat different from those obtaining in the case of the Ona, but presumably quite uniform for the entire Yahgan group. Indeed it would appear that the life of the Ona is much more varied than that of the adjoining tribe. The Yahgan are canoe people, but it does not seem probable that their life in boats and on the shore would tend to diversify them in physical type any more than the roaming life of the Ona. I think we must admit that the Yahgan owe their greater variability probably to the presence of more diverse physical types of an hereditary character than are found among the Ona. By this I mean that two or three, or more perhaps, of the various elements which have blended to form the composite "Indian" race in America, are found among the Yahgan, whereas in the Ona we have to deal either with a single type or with a group in which one single type overwhelmingly predominates.

In a "refuge" area one may expect to find all sorts of samples of the weaker and more primitive populations which have, from time to time, inhabited the continent. These odds-and-ends are likely to have been reduced to a certain homogeneity through isolation which brings about inbreeding and through selection. Both of these factors are notably operative in Tierra del Fuego. I think that it is an assumption justified by the evidence that the earliest inhabitants of the New World were short dolichocephals and that these were followed by short brachycephals. Among the Yahgan we have a fusion of two such elements, just as we have, to cite another instance, in Pueblo peoples of southwestern United States.

We must however consider the possibility that the canoe life of the Yahgan has tended to exercise a selective influence on their stature. Small men are less likely to fall out of small and primitive canoes than are large and unwieldy men. Great length of legs (which always distinguishes tall persons) is a great disadvantage in such craft. We are given to understand that the Yahgan women swim well and the men not at all. If this is true, it is conceivable that the shorter elements in this population have survived because the larger men proved to be too awkward for canoeing and were consequently eliminated by drowning. But this would necessitate the assumption that the large women were also eliminated or that they failed to transmit their large stature. While it is perfectly true that a large woman and a small canoe make a bad combination, it is equally true that a large woman makes as good a floater or swimmer as a small woman, and even a better.

However, there is another possibility that is worthy at least of mention. The legs of the Yahgan may have been shortened as a result of their boating habits. It is perfectly easy to suppose that a man who spends most of his time sitting in a canoe will have poorly developed legs, as have the Yahgan. It is not at all certain, however, that disuse of the legs for purposes of locomotion would necessarily decrease their length. And it is altogether improbable that such a decrease in leg length would establish itself as an hereditary characteristic. Moreover, the Yahgan are not merely "sawed-off" counterparts of the Ona. Not only are their legs shorter, but they are smaller in every way than their neighbors.

On the whole I am inclined to believe that the stocks which have blended to form the Yahgan were originally short-statured, short-legged peoples, and that, although canoe life may have operated to some extent to eliminate the taller individuals, the stunted stature of this people is in the main a characteristic of the original stocks from which they sprung.

The Ona are one of the tallest people in the world if any reliance can be placed upon our compiled figures and upon the estimates of various writers. They are exceptionally homogeneous in stature and in cephalic dimensions and indices, but not especially so in facial measurements and indices. They are not canoe people, but range over a wide area on foot. Apparently they have a harder time in gaining their subsistence than do the Yahgan. Are we to suppose that these people have attained their commanding

height by the exercise of their lower limbs in walking? We do not know that walking increases the length of the legs. Very tall men are not especially good walkers in the experience of modern armies; short men march more rapidly and endure better. On the other hand, there is nothing to lead us to suppose either that walking shortens the legs or that a life of wandering about on foot would tend to eliminate by some process of selection the short-legged strains. If one were to attribute the maximum imaginable effect to natural selection or to processes of atrophy and hypertrophy in altering either by selection or by the transmission of functional adaptations the hereditary leg-lengths of Ona and Yahgan, and if we brought ourselves to believe that some environmental agency had radically shortened the legs of the latter and lengthened those of the former, we should still be faced by a difference in stature between the two groups altogether beyond the adequacy of such an explanation. The Ona males are more than 17 cm. taller than the Yahgans!

At this point we may inquire with Cassius:

> "Now, in the name of all the gods at once,
> Upon what meat doth this our Caesar feed
> That he is grown so great?"

If we take into consideration the dietetic differences between the Ona and the Yahgan (see Table II), we observe that the outstanding fact is the dependence on the flesh of the guanaco by the Ona as contrasted with a reliance on mussels as a staple on the part of the Yahgan. Guanaco seems also to have been the principal article of diet of the Patagonian Tehuelche, who, according to reports, were as tall as the Ona, if not taller (mean stature of males 175 cm., according to Moreno and Lista). Yet it is hardly worth while to toy with the supposition that the statural differences between these groups are a matter of camel-meat versus shell-fish, especially since the ethnographic authorities seem to think that the Ona have a harder time in getting sufficient food than their stunted neighbors.

More promising perhaps is the factor of artificial selection in the warlike pursuits of the Ona. If it could be shown that the smaller and weaker of these people had been eliminated as a result of warfare, our problem would be solved. But in spite of the fact that the Ona are said to be more warlike than the Yahgan, it does not seem reasonable to ascribe their stature to military selection. There is no evidence, so far as I know, which would justify such a

conclusion. Nevertheless, the statistical homogeneity of this group does argue that some sort of selection has been at work. The Ona men are said sometimes to take Yahgan wives, and if this is true we should expect some at least of the offspring of such unions to be short. The Ona women are, however, almost as tall for their sex as are the men. Could it be possible that the Ona practise infanticide upon undergrown specimens of their race? There is no evidence that such is the case.

It is reported that the Ona of Tierra del Fuego are not alone in their attainment of an unusual bodily size, since animals transported to this region far exceed the size and bulk to which they ordinarily grow in other places. For example, it is stated that the guanaco in Tierra del Fuego is larger than the same animal farther north in the Andean area. Also it is said that foxes grow large and that imported English cattle produce gigantic offspring. If this be the case, it is very difficult to account for the stunted Yahgan who have practically the same environment as the Ona.

Most anthropologists ascribe the size of the Ona to their probable relationship with the Patagonian Tehuelche, to whom they are also allied culturally. In other words, the size of the Ona is thought to be a matter of heredity. As a matter of fact this explanation seems to be the only possible one unless some physiologist can demonstrate that the slight differences between Yahgan and Ona diets are directly responsible for their disparity in size. Even more striking instances of statural difference within the same environment occur in East Africa and the Lake region where the shortest pygmies known live cheek-by-jowl with gigantic Hamito-Negroids, the tallest people in the world.

Tall stature is generally a matter of heredity, and it is thought by Davenport that certain growth-repressing factors are dominant over their absence, inasmuch as he found high variability in short families as contrasted with tall families. If this is correct it is possible that the stature of the Ona is an expression of a recessive feature in a relatively pure stock. But the Ona are said occasionally to take Yahgan wives, and the variability of their facial and nasal indices is scarcely indicative of purity of race. We must consider also the hypothesis of heterosis or hybrid vigor, whereby hybrid offspring often exceed both parents in bodily size. But heterosis does not manifest itself always in human crosses. It does not occur, for example, in crosses between Hawaiians and Chinese,

nor apparently in most Negro-white crosses. There is, moreover, no evidence in the case of the Ona of any recent admixture with another stock except perhaps the Yahgan, who would scarcely be expected to contribute factors making for gigantic stature or even to maintain the average stature of any ordinary group with which they interbred.

I should be inclined to the speculation that the high stature of both Tehuelche and Ona is the result of the predominance in them of a tall and probably brachycephalic strain belonging to one of the later waves of immigrants into South America. I am of the opinion that this tall brachycephalic type, which occurs elsewhere in the New World, resulted from the intermixture of a brachycephalic type of medium stature with a tall dolichocephalic strain. It would appear that in this particular cross tallness was dominant. This is, admittedly, a speculation, but it is not based merely on a short consideration of the inadequate and second-hand anthropometric data on the Fuegians here presented. I do not pretend to be able to prove this contention, nor can I say exactly what "races" were involved in this postulated cross. I think, however, that the Mongoloid element in the American Indians came largely from the brachycephals, and that the tall dolichocephals were neither Negroid nor Mongoloid. Nor do I assume that the crossings which gave rise to this tall "hybrid" type necessarily took place in the New World; many of the American Indian groups included in this type may have originated in Asia.

We really need a good deal more of information about the effect of diet and climate on physical type before we can confidently dismiss the remarkable size contrast between the Ona and the Yahgan as a mere matter of hereditary difference. I should want more precise information about certain morphological characters of these two groups before committing myself finally to the opinion that they represent distinct racial combinations. However, upon the present showing I incline to the opinion that the size differences discussed above are primarily the result of hereditary factors, accentuated perhaps by occupational selection tending to make for shortness in the Yahgan and for great stature in the Ona.

Part I

FOOT INDIANS

THE ONA

THE Ona, today almost extinct, were Foot Indians who half a century ago occupied the northern part of Tierra del Fuego east of Useless bay, practically the whole of the east coast, and the plains and mountains southward almost to the shores of the Antarctic. This distribution is seen in pl. IV.[1]

Being a hunting people the Ona lived in small family groups, for they had to move rapidly to follow the game, and large encampments with many dogs made existence difficult. Only when a whale came ashore or when wrestling bouts were held did large gatherings take place.

Each family group usually controlled a long narrow territory extending from the mountains to the east coast, so that all the various kinds of animals and edible berries could be found in their particular area. These hunting groups were informally governed by their ablest member whose name might be applied to the whole group. More commonly, however, geographical names were used, such as *Kámi*^{n} *u chon*, "men of Lake Fagnano." Europeans were called *K'óli ot*, "his cape is red," on account of the red bayeta blankets used long ago by the police.

Language

Both the Ona and the Haush fall in the same linguistic category as the natives of Patagonia, north of the Straits of Magellan. Lehmann-Nitsche (1914), who has most ably demonstrated this relationship, suggests the term *Tshon* to designate the whole group.

[1] A map published by C. W. Furlong (1917, fig. 7) shows Ona on Navarin island. According to Mr. William Bridges there were Ona on this island the year of Mr. Furlong's visit, but they had been transported there by the Bridges family to tend sheep. The territory opposite Navarin island marked "unoccupied" on this map was said formerly to have been controlled by an Ona called Teninisk^{e} and his family.

Considerable variation in pronunciation and accent was noted by the writer among the Ona. These differences were not great enough to give rise to separate dialects, and do not approximate the gap between Ona and Haush, which are said to have been mutually intelligible only with difficulty.

As to the Ona tongue, it may be described as harsh, guttural, and explosive. Initial *k* is almost clicked. Initial *t* is usually pronounced explosively; so also *p*. There is much individual variation in this quality, and when the voice is raised there is a tendency to emphasize the harsher sounds—or perhaps they grate more raspingly on unaccustomed ears. Both initial and final *h* are strongly pronounced, so that such words as *heúrrh*, arrowhead, combining explosive *h*'s with double *r*, are almost impossible to enunciate correctly to one not born to the manner. Perhaps the spelling *hheúrrhh* represents the sound more adequately than the spelling adopted.

There is a soft *ch* sound in the Ona tongue (*q*) corresponding to the Scotch *ch* as in "loch." There is no sound like *b* or *f*, and several other students give no *d*. However, initial *t*, especially before *a*, so closely approaches to *d* that the writer found that he had recorded the same word at different times with both a *d* and a *t*. On showing Mr. William Bridges these inconsistencies he advised leaving the *d*'s in certain cases, saying that this letter of our alphabet came as close to the Ona sound as *t*. However, though reluctantly, I have eliminated the *d*'s in the vocabulary herein presented in the belief that the variations in sound noted at different times have no structural value in the language.

Final *n* in Ona is usually clipped so that it is barely recognizable. The quality of this sound differs much with different individuals, so that no rule can be laid down. In general there is a tendency to place a slight nasal at the end of all words terminating in a vowel, especially *i*, or words ending in *sh* and *st*.

The Ona vocabulary, like the Yahgan, is lacking in abstract expressions but is highly specialized in material matters. For instance, the writer found the following words applied to guanaco:

yoyen, guanaco at a distance
marre^{n}, old male guanaco
máishe, old female guanaco
tóol or *totl*, new-born guanaco
glátuen, male guanaco one year old
ómte or *oné*, female guanaco one year old.

In addition, there are words for sick guanaco and pregnant guanaco. Gallardo (1910) records *toholpai* for a female accompanied by a

young animal. These words all apply to guanaco afoot; to them might be added a host of words used to describe different parts of the animal.

As another example of specialized terms, the writer found the following words used for dog:

uístne, dog far away
parrkh, black male dog
chéyo^{n}, female dog (also female in general)
pótel, red male
chotl, white male
kóle, white female
paqche, woolly dog.

In spite of the richness of the Ona tongue in concrete terms, the Arcadian simplicity of Ona existence is brought home to us by their system of counting, which employed compound numbers or similes for anything above three. The compounds for 7, 8, 9, 11, 12, 20, etc., given in the vocabulary of Father Beauvoir, appear to be the result of missionary contact, for the Bridges brothers assured the writer that the following numbers were all that the Ona employed in the old days:

Number	Ona	English
1	*sos*	one
2	*shóke*	two
3	*sháuken*	three
4	*kóne shóke*	twice two
5	*sos chen win*	one hand like
6	*kóne sháuken*	twice three
7	[none]	
8	[none]	
9	[none]	
10	*shóke chen win*	two hand like
many	*karrh*	(of inanimate objects)
many	*símien*	(of animals)
very many	*émele*	

In comment on this numeral system we may say that it is based on the powers of perception, for the number of objects up to three (or more in the case of mentally alert people) can be distinguished at a glance without going through the process of counting. This may have caused the Romans to change IIII to IV, as IIII is difficult to distinguish from III. Furthermore, the doubling of 2 and 3 by the Ona is a normal mental process used by people in all stages of development. The use of the hand to designate 5 is common among primitive tribes all over the world and is found in simple systems of notation such as the Aztec. Two hands making 10 is also a world-wide concept, which, combined with place-notation, has given us our decimal system. The Fuegians never

combined the hands and feet to make a vigesimal system, found among many primitive people, including our own ancestors, as attested by survivals like the French *quatre vingt* or the English *score*.

Clothing

Perhaps no feature of Ona life is more striking to us than their apparent unpreparedness to face the rigors of the Fuegian climate, especially as regards their houses and their clothes. The skin of

Fig. 6.—Ona guanaco robe. Size, 60 by 63 in. (14/2257)

the guanaco, however, from which most of their clothing was made, is very suitable for garments, as the thin parchment-like hide soon becomes softened by use without tanning, and the shaggy wool of the adult animal is nearly water-proof and extraordinarily warm.

Direct physical contact with snow is something to which we are not accustomed, it is true, but probably it is stimulating and

healthful in small quantity, provided one may exercise to keep the blood circulating and one is not oppressed by fatigue. But the Ona had no warm houses to temper the cold, not even a roof to avert the blasts of storms. In the old days the Ona men, wearied by the chase of game, wrapped their robes tight and slept with bare legs in the snow, using a block of frozen meat for a pillow.

FIG. 7.—Ona Indians. (From Alberto De Agostini, *I Miei Viaggi nella Terra del Fuoco.*)

To be sure, they were inured to cold from childhood, but only a people of magnificent physique and robust constitution, materially equipped as were the Ona, could have faced the long dark winters of Tierra del Fuego, the deeply piled snow of the forests, the glaring sheet-ice of the open plains.

Men's Clothing.—The chief garment worn by the men was a robe or cape (*óli*) made from the joined skins of two or sometimes three adult guanaco (fig. 6). These skins were sewn together with guanaco-sinew (*yuh*) to form an irregular square about five feet across. The skin side of this garment was coated with a mixture of red paint and saliva or grease. Sometimes broad red bands were applied to the fur.

This robe, the only body-covering of the men, was habitually worn over both shoulders. On the march the left hand projected through the overlapping ends to hold the bow. If work requiring the use of the hands were to be performed, then the robe was wound over the left shoulder and under the right arm. These two positions of the robe are illustrated in fig. 7. When violent action was called for, as in war or hunting, the robe was discarded entirely. Indeed, the mere movement of stringing and drawing an arrow served to cast the robe backward from the shoulders, as may be seen in fig. 34.

The Ona robe is similar to the robe worn by the Tehuelche of Patagonia in that both are made of guanaco-skins and both are painted. The Tehuelche robe, however, is not made of adult skins, but of the skins of newborn animals. Tehuelche robes are not painted in solid color like those of the Ona, but are covered with elaborate polychrome designs of considerable esthetic merit. The Tehuelche robe was worn with the fur turned toward the body, while the Ona, who encountered more rain than the Tehuelche, turned the fur toward the weather. Furthermore, the Tehuelche held their robes in place at times by a belt, while the Ona robe was not cinctured. In spite of these varied differences one is inclined to see technological relationship in the robes of the two tribes, though only in view of other and more directly related features.

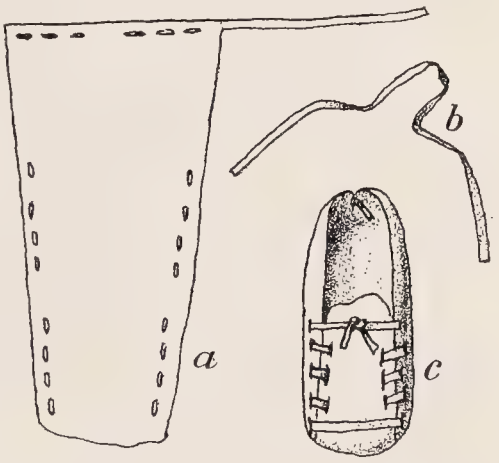


FIG. 8.—Pattern of Ona moccasin.

The Ona moccasin (*hámni*) is made from the foreleg of the guanaco. After the hide had been scraped and soaked in water until soft, a pattern (fig. 8, *a*) resembling a long truncated cone was cut out, with a thong extending from one side. This thong served to sew together the heel. Next the foot was placed on the hide, the heel in its proper place, and the front of the skin was doubled over the toes and instep. At this point any extra trimming that may have been necessary was done. Holes were now pierced

along the sides. A heavy thong of guanaco neck or seal-hide (fig. 8, *b*) was next passed over the toes and through the pairs of holes on either side, laced through successive side slits, and finally tied across the instep.

The moccasins were worn fur-side out, and are most attractive in appearance, for the fur is partly white and partly brown (fig. 9, *a*).

FIG. 9.—Ona moccasins. Length of *a*, 10½ in. (14/2429, 2432)

They were stuffed with grass, which made them warm even when wet. Mr. Weld and the writer wore them at times and found them most comfortable and serviceable, though they tended to stretch when wet. Their smell is all-pervading and unpleasant.

The Ona moccasin bears no resemblance to the recent footgear of the Tehuelche, who in the nineteenth century wore skin boots made from the hocks of pumas or horses. However, the Tehuelche used at times what is described as an overshoe, and these probably were like the Ona moccasins. The Indians encountered by Magel-

lan at San Julian in 1520 are said to have clad their feet in skins of a strange beast with "a large head, and great eares like unto a

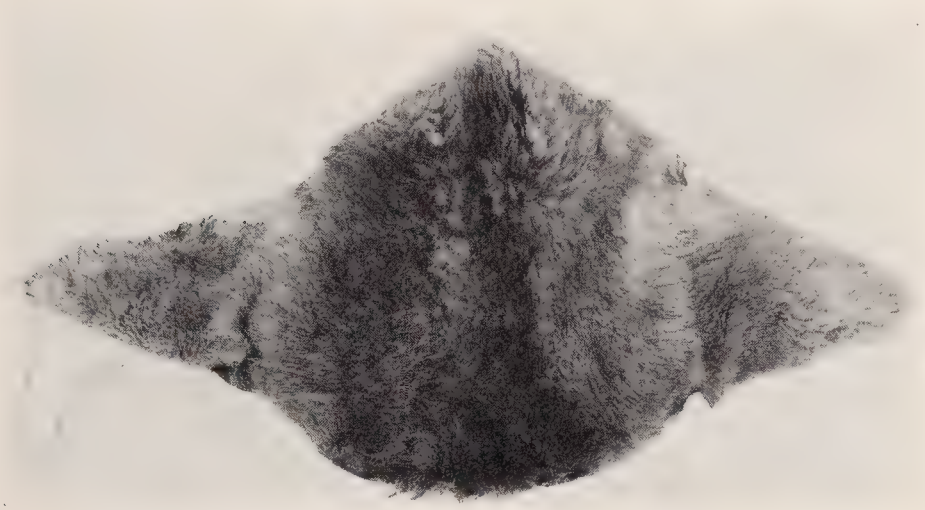


FIG. 10.—Ona headband. Length, 15 in. (14/2427)

Mule, with the body of a Cammell, and the tayle of a Horse." [1] This can only be the guanaco, and so it seems certain that once

FIG. 11.—Ona shaman's headband. Length, 13 in. (14/2425)

the Tehuelche wore footgear like that of the Ona. The Yahgan also made moccasins of a kind very much like the Ona.

[1] Purchas His Pilgrimes, ed. 1905, II, p. 87.

Robe and moccasins were the only garments regularly used by Ona men. When hunting or engaged in warfare, however, they wore what we may call a headband or fur diadem (*gúchilq*), consisting of a triangular piece of skin (fig. 10) tied across the forehead. It was made from the forehead of the guanaco, which is dull-gray in color. Combined with the thick hair affected by the Ona it

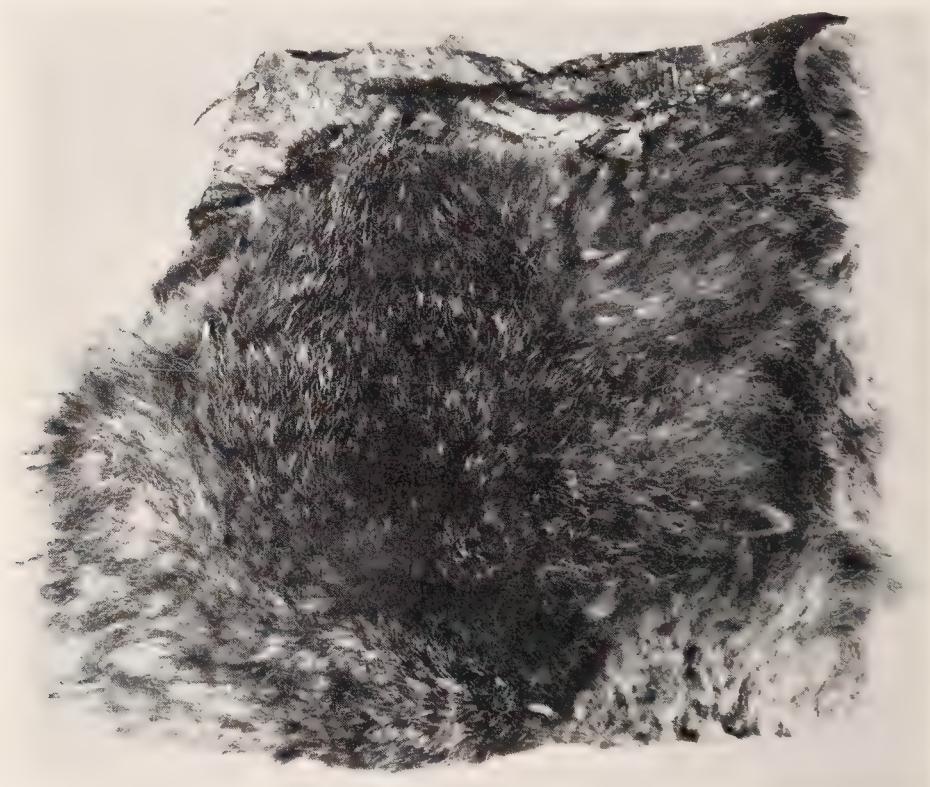


FIG. 12.—Ona man's carrying-bag. Width, 15 in. (14/2324)

afforded some protection from rain and snow, but primarily it was utilized on account of its protective coloring.

The Ona shaman on ceremonial occasions wore a similarly shaped cap (*póorrh*^{n}) made from the white down-covered skin of the kelp-goose (fig. 11). This may be a feature introduced from Yahgan sources, as it seems to have been used more frequently by that tribe.

During the winter, when hunting in heavy snow, the Ona occasionally used leggings, which they called *irsh*^{n}*k'íĭl*, "quiver of

the leg." These consist of pieces of guanaco-skin with the hair turned inward; they are laced up the front. The eastern Yahgan also used them, and we illustrate an example (fig. 47) obtained from that source.

When away from camp the Ona man carried a fox-skin bag (*hási*^{n}) tucked under a hide thong encircling the waist. We show an example in fig. 12. Although carried as an article of utility, it undoubtedly provided added warmth, and it served as a pubic covering when the robe was discarded. The normal contents of this bag were: (1) a spare bowstring, (2) fire-making apparatus, (3) red paint, (4) a knife, (5) a scraper, (6) feathers, and (7) glass for making arrow-points. This constituted a light load, but enabled life to be carried on for a long time away from the base of supplies. Similar bags, according to Vargas Ponce, were worn by the Tehuelche in the eighteenth century.

FIG. 13.—Ona cradle. Length, 30 in. (14/2382)

Women's Clothing. — The Ona women wore robes made like those of the men from two or three skins of the adult guanaco and similarly painted. They were likely, however, to be shorter than the man's robe, and often did not extend much below the knee. As the women had countless tasks to perform, they needed the full use of their hands, and so the robe could not be held in place; hence thongs were sewn to the robe and these were knotted on the chest. The Tehuelche women held their robes in place with a pin.

While Ona men wore no body-covering but the robe, Ona women, who depended less on exercise for warmth, used as an undergarment a slip of guanaco-skin known as *koi áten*, "hip tie," which extended from the armpits to the knees. It was worn with the fur turned inward, and was secured around the waist by a thong. A similar garment was used by Tehuelche women, but the unfortunate Yahgan ladies had no such protection from the weather. Ona women always wore a small triangular apron of guanaco-skin (*skĕ*) as a pubic covering. It was secured around the waist by a thong. In fig. 44 is illustrated an example of the similar garment found among the Yahgan.

Children's Clothing.—Ona children often ran naked even during the winter. However, they were provided with a guanaco robe of appropriate size. Sometimes they had small moccasins made with the fur turned inward (*ónik*). One of these is shown in fig. 9, *b*.

Infants were wrapped in skin and lashed with a spiral hide bandage to a cradle (*taaq*). As seen in fig. 13 this is a ladder-like frame of uprights and cross-bars. The points on the lower end were sharpened so that they might be thrust in the ground and the child kept away from the damp. At the top was placed a flap of hide to protect the infant's eyes from the glare of the sun. Both the Tehuelche and the Araucanians used a cradle, though of a different type from that of the Ona. Fuegian Canoe Indians, however, carried their babes in a fold of their capes.

Ornamentation and Decoration

The Ona affected no form of hair-dressing to beautify their persons, but allowed the hair to grow like a shaggy mane except across the forehead where it was roughtly trimmed to form a bang. As a sign of mourning the top of the head was shaved. Body and facial hair, including the eyebrows, they removed with a pair of mussel-shells serving as tweezers.

Tattooing, found also among the Tehuelche, was limited among the Ona to incisions in the skin of the forearms into which they rubbed charcoal. Similar embellishment was practised by the Haush, but was not known to the Canoe Indians.

Facial and body painting (fig. 34) they practised both on ceremonial occasions and in everyday life. Red and orange paint was obtained by burning suitable earth, found apparently in many places. For white paint they employed pure white clay. Ground

charcoal supplied black paint. These colors were applied with the hand or finger after mixing the pigment with saliva or grease. The patterns, simple in character, may be studied in the series of portraits published by Gallardo. Among the Ona we noted the widespread New World belief that paint gives protection against the weather and wards off sickness. The Tehuelche told Captain Musters (1871, p. 163) that they painted their faces to "keep off the wind."

The chief ornaments were anklets and wristlets, worn singly or in pairs. Usually they were made of guanaco-sinew finely braided (*chemq*); sometimes they were of plaited grass (*tai*), as seen in fig. 14. The Yahgan made no bands of this type, but they braided grass ropes to secure their canoes.

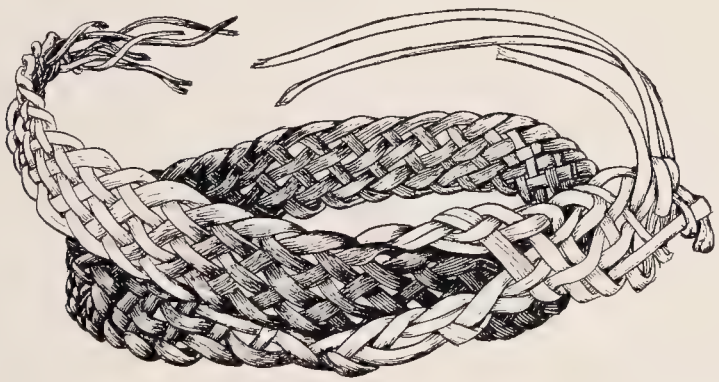


FIG. 14.—Ona braided grass anklet. Width, $\frac{5}{8}$ in. (14/2409)

Necklaces were manufactured from braided guanaco-sinew, on which were sometimes strung cylindrical beads cut from the leg-bones of birds.

THE ENCAMPMENT

To our eyes the greatest deficiency in the material culture of the Ona was their lack of a dwelling-house. Instead they used a windbreak (*káwi*) manufactured of guanaco-hides sewn together and painted red. A specimen in the Museum, probably the last ever used in Tierra del Fuego, measures $8\frac{1}{2}$ by 12 feet, but, as it was set up not in the old-fashioned way but wrapped around a conical log frame, I imagine that it is wider than the usual shelter (fig. 15).

To make camp, the Ona pegged with thorns or else lashed their skin shelter to trees, were any available. For camping in the open

plains, sticks (*léul* or *árrte*) five or six feet long were carried; these they drove into the ground, and to them the shelter was lashed. The windbreak if possible was erected to form an arc of a circle, inward-sloping toward the center, for thus the fire was shielded from the vigor of the wind, and the family secured a meager measure of shelter from rain or snow. Against the walls crowded men, women, children, and dogs in a common search for warmth. A winter night with a gale blowing and snow falling cannot have been comfortable.

FIG. 15.—Ona family in camp. (From Alberto M. De Agostini, *I Miei Viaggi nella Terra del Fuoco.*)

Ona windbreaks have been thought to be the prototype of the Tehuelche *toldo* or *kau*. This was a skin house with three vertical walls and a sloping roof supported by three rows of stakes. While the fourth side, which faced eastward, i.e., away from the prevailing winds, was normally left open, in very cold weather the Tehuelche sometimes added a fourth row of stakes, an extra section of roof, and a fourth wall. At the back of the *toldo* hide curtains were hung between the poles to form small sleeping compartments, while the front of the tent formed the common living-quarters. From this brief description the reader will see that about the only resemblance between Tehuelche *toldo* and Ona windbreak was

that both were made of guanaco-hide and set on stakes. However, the Tehuelche could not have used these large and heavy houses of skin before the advent of the horse, for unless a man employed a numerous retinue of wives such tents could not have been transported.

FIG. 16.—Skin windbreak in Patagonia. (After Oviedo.)

Oviedo (lib. XX, cap. VII), in recording the voyage of Loaysa in 1526, has preserved a description of the natives near Bahía de la Victoria who used a windbreak of Ona type. His illustration we reproduce in fig. 16. It might be argued that this was seen on the Fuegian and not the Patagonia side of the straits, but Oviedo expressly states that no people were encountered by this expedition on the south shore. Bahía de la Victoria is a name rarely found on even the earliest charts, but on the map of Alonso de Santa Cruz [1] it is shown on the north side of the second narrows, and hence must correspond to the modern Pickett, Withsand, or Oazy bays. The fact that the words used by the Ona (*káwi*) and

[1] Innsbruck ed., 1908, pl. XV; Madrid ed., 1918, pl. 120.

Tehuelche (*kau*) to name their habitations are similar, goes far to substantiate Oviedo's attribution of the windbreak to the Tehuelche.

In moving camp, the Ona household goods, of which we shall speak presently, were packed away in baskets and bags. The shelter was taken down and the irregular edges folded in to form a rectangle. The household effects were then placed in a line along one edge, with the larger objects in the center, and the whole was rolled and lashed to form a cigar-shape pack. This might measure six feet long and weigh as much as two hundred pounds (fig. 17).

FIG. 17.—Ona family on a journey. (From Alberto M. De Agostini, *I Miei Viaggi nella Terra del Fuoco.*)

On the march the pack was carried across the woman's back and was suspended by a harness (*mówi*^{n}) which passed over the chest. This consisted of a great many—perhaps thirty—small parallel thongs to support the weight without cutting into the flesh, and a few longer thongs which served to secure the pack (fig. 18). In walking through forests the women often had to turn sideways to pass between the undergrowth: then the pointed ends of the bundle were an advantage. On account of the great weight to be balanced, the women often carried a tall walking-stick, called *na kléul.*

Formerly the Ona erected for their ceremonies conical lodges of heavy logs covered with sods (fig. 38). Such houses of course could not be moved, but one wonders why each Ona family did not have one or more log-and-sod houses so situated that they could be occupied during the most extreme weather. They did apparently in rare instances erect such lodges for habitation in the old days, but on the death of any member of the family the

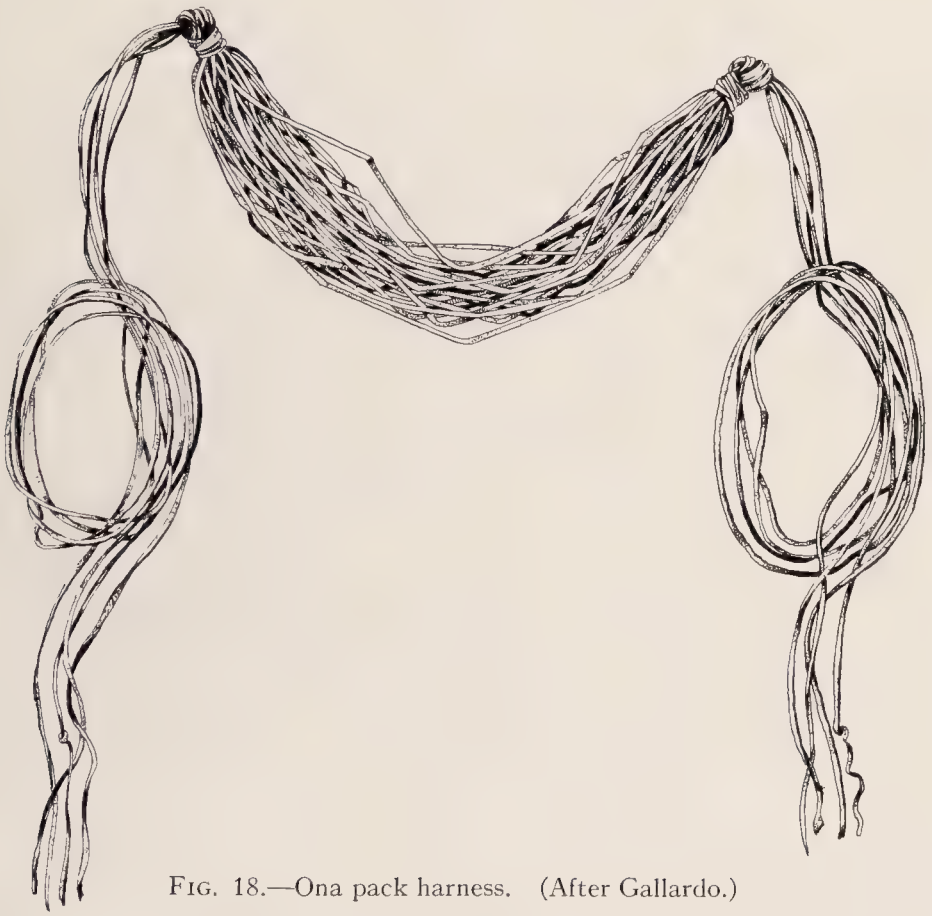


FIG. 18.—Ona pack harness. (After Gallardo.)

house was burned. Before the white colonization brought metal axes to the island it must have involved much labor to erect log-and-sod lodges, and so the Ona preferred their windbreaks. It is not true that the Ona were so superior physically that cold did not affect them; rather it seems to have been a case of shivering and suffering through laziness and lack of initiative.

After the introduction of the ax by Europeans, with the resultant greater ease in obtaining poles, the Ona adopted the practice of

erecting conical wigwams. These were about ten feet high and were thatched with leaves or burlap to a height of six or seven feet. As such structures did not give complete overhead protection, they might be described as circular windbreaks. As in the case of Yahgan houses, the Ona often sunk the floor slightly under ground in order that the fire might gain added protection and that advantage might be taken of the tendency of heat to rise. Bunks they built along the sides by means of logs secured with stakes. On their bunks they piled branches covered with skins.

During recent years a few Ona erected houses of European style from hand-hewn boards. The roofs of these were reasonably tight, but the side-walls were so full of chinks that they scarcely impeded the wind, which was ever redistributing the filth of the soot-blackened interior. Without doubt a migratory hunting people should not attempt to live in permanent quarters until they have learned something of sanitation and hygiene.

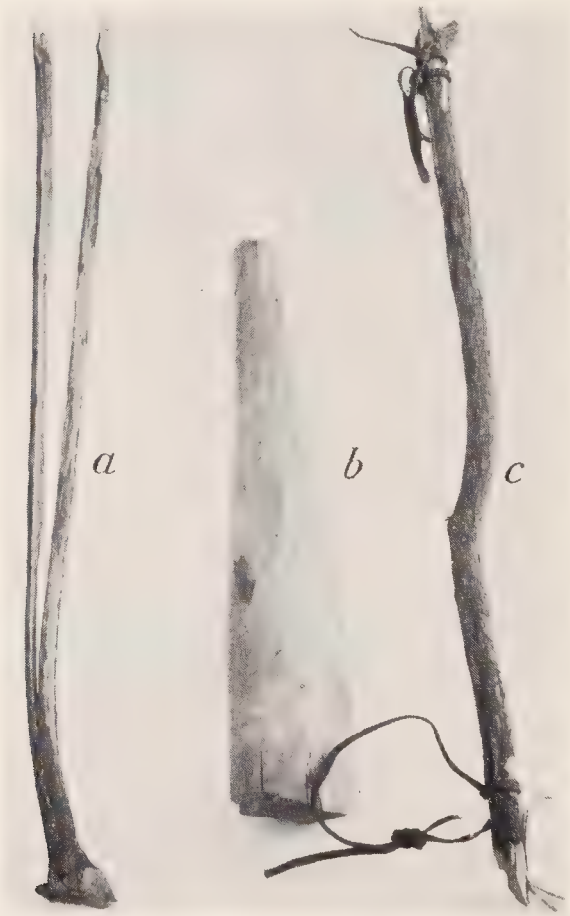


FIG. 19.—Ona fire-tongs, hide-beater, and dog-leash. Length, 29, 18, and 29 in. (14/2401, 2417, 2400)

CAMP EQUIPMENT

Ona household utensils are simple, strong, serviceable, and light in weight, so that they may easily be transported.

1. FIRE-MAKING APPARATUS.—All the Fuegian tribes made fire with iron pyrites (*yarr haúk*), a piece of flint, and a dried fungus (*uo*) or bird-down for tinder (fig. 53). As pointed out by Dr.

Cooper this method without doubt is pre-European, because it was observed on the Straits of Magellan as early as 1580. This appears to be an example of independent invention, for the Tehuelche, Pampas, and Araucanian tribes all made fire by drilling.

FIG. 20.—Ona water-bag. Width, 9 in. (14/2383)

In the geological section of the Museum at Punta Arenas pyrites specimens from the Straits of Magellan, Mercury sound, Clarence island, Merton island, Union bay, and near Lake Fagnano are on exhibition. This material seems to be widely distributed, but Rev. Thomas Bridges writes that Clarence island was the principal source of supply, at least for the Yahgan, who obtained it through the Alacaluf. The fungus used for tinder we saw growing in the interior of the island, especially behind Harberton and at the east end of Lake Fagnano. The Tehuelche also used fungus for tinder.

2. Fire-tongs.—Every Ona household carried a pair of fire-tongs, such as are illustrated in fig. 19, *a*. They are simply sticks, usually of barberry wood, split for the greater part of their length. The Ona (*lákel*) and Yahgan (*láka*) words for this implement are

Fig. 21.—Ona guanaco-hide storage-bag. Width, 21 in. (14/2385)

clearly akin, so one tribe must have borrowed it from the other; but we have no way of deciding who originated it.

3. Grease Stone.—Each family carried a smooth, water-worn stone five or six inches in diameter, the primary use of which was to collect marrow by cracking the hot bones on the cold stone on which the grease then congealed, so that it could be scraped off and eaten. This stone served also as an anvil or hammer, and perhaps as a sharpening stone, though a smaller stone

of the same type usually was carried for whetting tools. The Ona employed the grease stone to cook seeds, heating it in the fire and then scattering seeds over the upper surface.

4. WATER-BAG.—For carrying and storing water the Ona used a bag (*sĕ*) of guanaco-hide covered with red paint (fig. 20). Both bag and handle were cut from a single piece of hide in much the same pattern as the heel of the moccasin (fig. 8, *a*). Water is easily obtained in Tierra del Fuego in summer; in winter the Indians filled the bag with snow and hung it near the fire where the snow would melt. The Ona had no kind of drinking-cup, but the Yahgan used a shell. The Tehuelche sometimes used a skin water-bag.

FIG. 22.—Ona basket. Diameter, 7 in. (14/2430)

5. STORAGE-BAGS. — For storage, bags of varying shapes, sizes, names, and materials were used, and also baskets. Three kinds of bags, however, formed part of the equipment of every household:

(*a*) A large fox-skin bag (*hási*^{n}) carried by the men on a thong around the waist, illustrated in fig. 12;

(*b*) A guanaco-hide bag (*shetelóli*), painted red, used primarily by the women to hold their smaller belongings, illustrated in fig. 21;

(*c*) A small fox-skin bag (*kólwe*) employed for storing red paint, which the Ona used to adorn their persons and most of their utensils.

In addition to the above, bags were made of seal-skin, bird-skin, seal-bladder, whale-intestine, or whatever material was at hand when a bag was needed.

6. Baskets.—The Canoe Indians were the real basket-makers of Fuegia, and the four types in use among the Yahgan are described in detail below. The commonest of these, known to the Yahgan as *tawĕ'la*, is a coiled basket sewn with half hitches (figs. 59 and 61). This was copied by the southern Ona (fig. 22), who had no name for it beyond that of the grass (*tai*) from which it was manufactured. That the northern Ona ever made baskets is questionable.

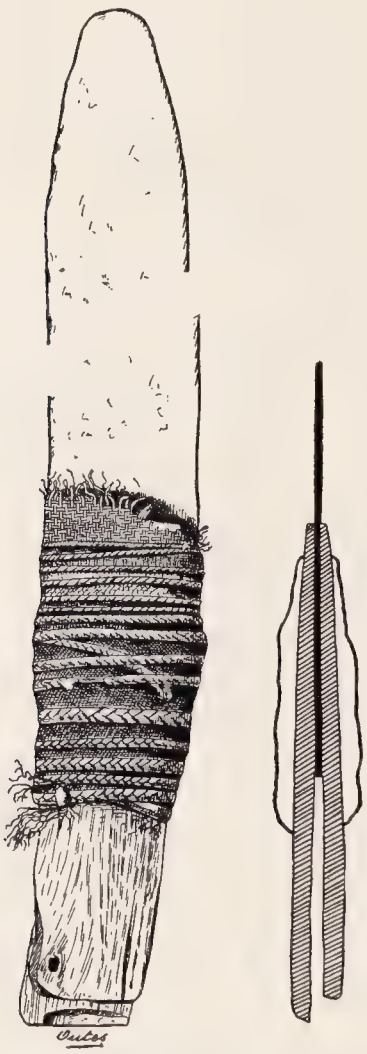


Fig. 23.—Ona knife. Length, 8⅝ in. (After Outes, 1906.)

7. Comb.—Ona combs (*ómche*) were sometimes cut from a piece of wood or whale-bone; often they used a porpoise or an otter jaw. Yahgan examples of the two types appear in fig. 54.

8. Dog-leash.—To secure their dogs in camp, to prevent their stealing food or straying, the Ona employed a stick two or three feet long with thongs attached to grooves in each end (fig. 19, *c*). One thong was tied to the dog's neck and the other to a small tree: thus the animal was free to move about, but could not reach his lashings to gnaw himself loose.

Tools

Ona tools were few in number and of the simplest types. Descriptions have been published by Outes (1906) and by Gallardo (1910).

1. Knife (*péye*).—The Ona knife-blade was any obtainable piece of scrap-iron. Barrel-hoops and discarded fragments of European tools were commonly used. Two types of handles were employed. In one the blade was bound with

a hide thong against the side of a wooden handle; in the other the wooden handle was split and then lashed together again, enclosing the blade between the two pieces (fig. 23). Prehistoric knives are described below (page 112).

2. Flesher (*cham*).—For cleaning hides the Ona used a wooden handle with a deeply beveled transverse notch at one end. In this, cushioned on hide or moss, was set a piece of glass (fig. 24).

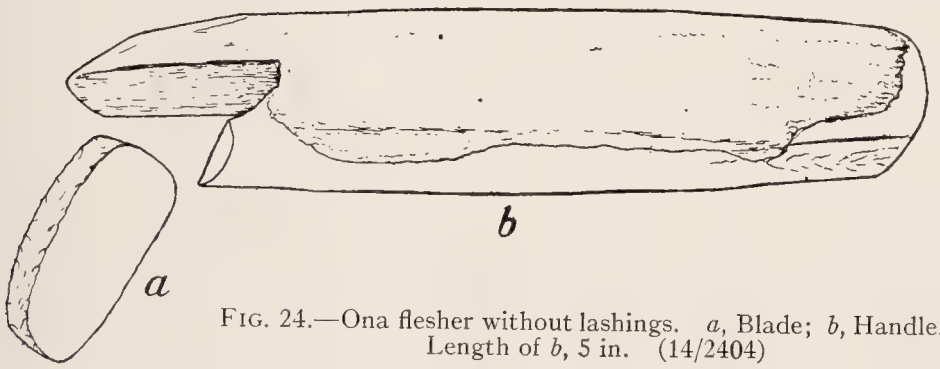


Fig. 24.—Ona flesher without lashings. *a*, Blade; *b*, Handle. Length of *b*, 5 in. (14/2404)

Longitudinal thongs held the blade in place while transverse wrappings secured the whole (fig. 25, *b*). This form of scraper is evidently very ancient, as stone blades fitted for this type of hafting occur at old camp-sites (pl. viii, *b*, *c*, *e*). However, one suspects that the first blades thus hafted were mussel-shells, which to this day are also known as *cham*.

In use the scraper was placed in the hand with the blade under the ball of the thumb, and was pushed across the hide away from the body.

3. Wood Scraper (*teklek*).—A second type of scraper (fig. 25, *a*) employed in woodworking consists of a metal blade set on a handle in the same manner as the knife. It differs from the knife in that the cutting edge runs across not the side but the end of the metal. This tool, employed principally for bow and arrow making, was worked toward rather than away from the body.

4. Awl (*móoh*).—Awls were employed by the Ona for various purposes, including basketry. In recent years they were made of metal, set in a bone or wooden handle (fig. 26); but formerly they were of bone.

5. Chipping Tool (*ko heúrrhásh*).—In chipping glass in recent years, and doubtless in working stone long ago, the Ona made use

of a small leg-bone of the guanaco (fig. 30) sharpened to a dull point.

6. Sharpening Stones.—Metal tools were sharpened on stone. To give the final edge, a small, close-grained, water-worn stone was

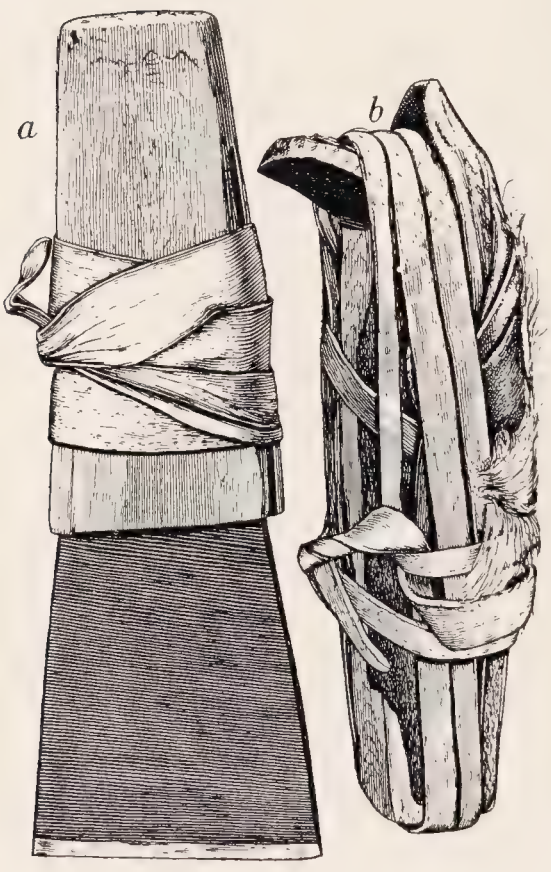


Fig. 25.—Ona scrapers. *a*, Wood scraper; *b*, Flesher. Length of *a*, 5½ in. (14/2412, 2404)

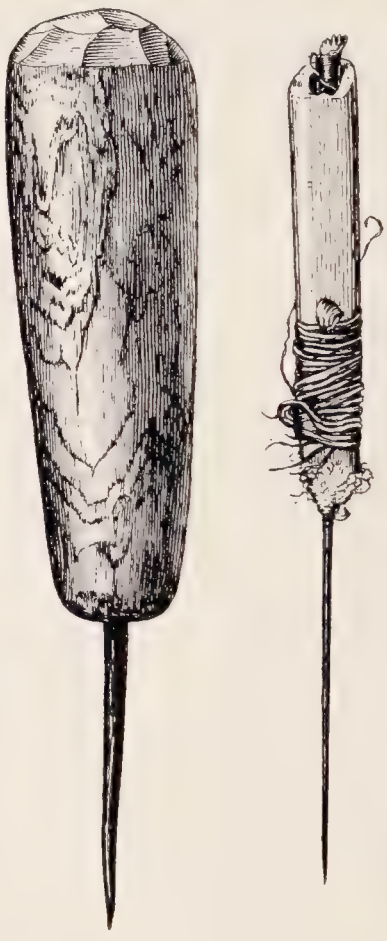


Fig. 26.—Ona awls. Length, 3¾and 5 in. (14/2416, 2415)

utilized (fig. 31, *a*). Another sharpener, known as *yarr heúrrhásh*, is a coarse-grained stone employed to sharpen the chipping tool (fig. 31, *b*).

7. Stone Shaft-polisher (*ham k'yarr*).—This type of stone, marked by one or more grooves across its surface, was widely used among primitive arrow-makers. In Tierra del Fuego (fig. 27) it

was of a coarse variety. One suspects that stones which had long served to sharpen the chipping tool (fig. 31, *b*) in time became grooved and were then employed for polishing arrowshafts.

8. Skin Shaft-polisher (*shoshróshtel*).—A small bit of fox-skin with a mixture of sand in the fur served the Ona as sandpaper and gave the final polish to their arrows (fig. 28).

9. Hide-beater (*árrte kaíyekásh*).—In recent years these Indians softened skins by beating them with clubs of the type seen in fig. 19, *b*. I was told that this practice was unknown to the natives before the white colonization.

Weapons and Methods of Hunting

BOW-MAKING

As a hunting people the Ona depended for their existence on the bow (*ha*); and to its manufacture, management, and protection they devoted an extraordinary amount of care. Not every man made bows; rather highly skilled artisans undertook their production, receiving game or some favor in payment for their labor. Almost every man, however, made his own arrows, because the supply might run out and anyone who was dependent on others would be at a great disadvantage.

The bows were made from the wood of the smallest of the three beech trees (*Nothofagus antarctica*) which grow in Tierra del Fuego. In Spanish it is called *ñire;* in the Indian tongue it is *char*^{n}, or sometimes simply *sho wínshi*, which means the "right tree," i.e., for making bows. From the selected tree they split a fragment six or seven feet long and three or four inches thick, which must come from just beneath the bark where the wood is most elastic. From it the bow was worked down with a scraper (*teklek*) until it was from four feet four inches to five feet four inches long and had assumed the requisite outline and form.

The outline is that of the new moon, curved even when unstrung, swelling in the middle, and tapering delicately to the tips. Small flutings cover the entire surface. On bows made years ago they are most carefully fashioned, so that each single fluting runs from tip to tip, swelling and diminishing in accordance with the diameter of the bow. But on more recent bows, made for the greater part to sell to Europeans, the fluting is not executed so faithfully. In

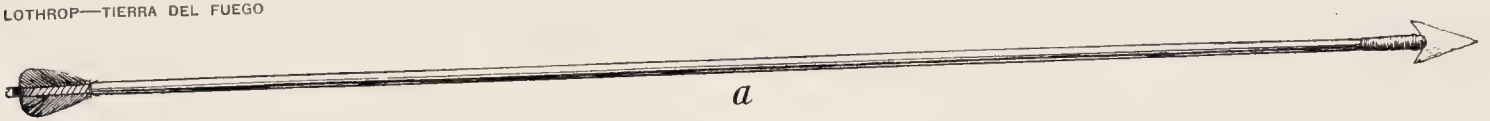
cross-section the bow is tear-shape (pl. v, *f*), and the point forms the "belly" of the bow which was held toward the archer.

This is a very unusual weapon, for most bows are flattened at a right-angle to the line of pull, in order to make them more flexible; but the Ona did not want a flexible bow, for several reasons. In the first place the bowstring he employed stretched under tension; also he drew the nock of his arrow not to the ear, as in classical archery, but to the chin; furthermore the bow was pulled not against a stiffly extended arm but against a bent arm, which was snapped straight at the moment of discharge to add to the impetus of the arrow.

One cannot but wonder why, how, and where this strange bow of the Ona was devised. Did some individual acquire fame by shooting in this unusual but effective fashion, and hence cause others to imitate him? Was the region where this bow was perfected (perhaps before the settlement of Fuegia) devoid of flexible wood suitable for bows, so that a peculiar style of archery arose? There seems to be no answer. However, the beechwood of Tierra del Fuego is capable of greater flexion than the Ona thought desirable, according to Mr. William Bridges, an expert archer of the Ona school, who told the writer that he had made of this wood for his own use (patterned after a bow from the Paraguayan Chaco) bows which were thinner and more flexible than customary among the Ona.

Bows with the curious Ona cross-section and outline were manufactured by the Yahgan, the Alacaluf, and perhaps the Chono. The writer has never seen a bow of the Tehuelche, who discarded this weapon in favor of the bola during the eighteenth century. In the sixteenth century, according to Oviedo (lib. xx, cap. vi), Tehuelche bows were "short and stout and broad, of very stiff wood." In the Museum there is an ancient weapon (9/7063) suggestive of the Ona bow; it was found in the cave of Chiuchiu in the Atacama desert in northern Chile. Arrowpoints from northern Chile, however, recall Patagonian rather than Fuegian types.

To return to the Ona bow, the bowstring (*ha kyuh*) was made of twisted sinews from the foreleg of the guanaco. This sinew they extracted by passing a noose beneath it and thus working it free from the flesh. It was attached by forming a slip-noose and placing it around the bottom of the bow (pl. v, *g*). The top of



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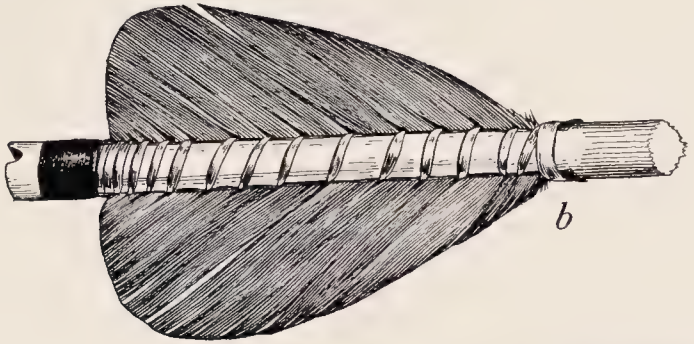

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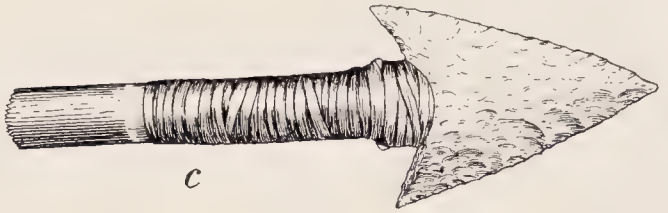

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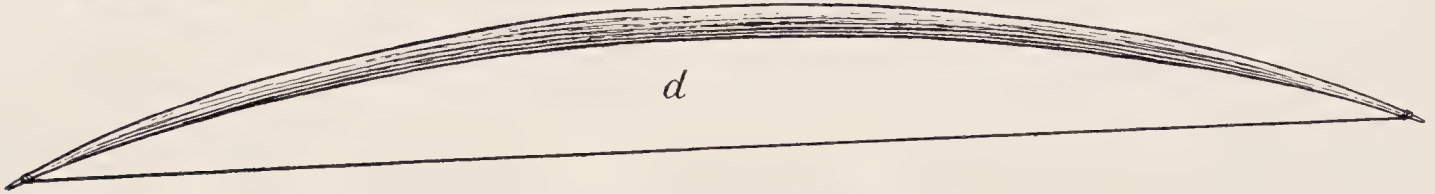

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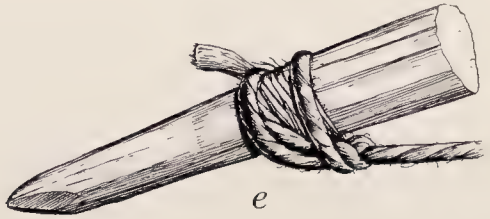

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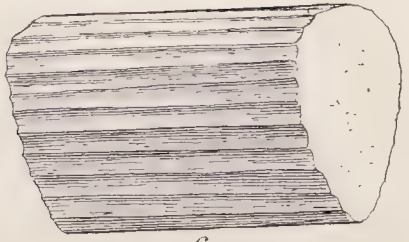

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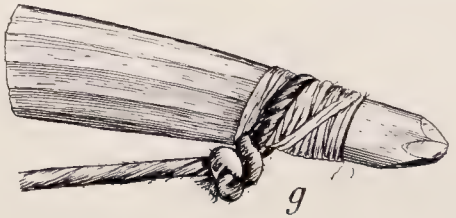


g

ONA BOW AND ARROW

LENGTH OF *a*, 32 IN.; OF *d*, 63½ IN. (14/2402, 2381)

the bow was then grasped in one hand with the forearm running along the "belly"; the bottom was set on the ground against the outside of the foot with the "belly" against the knee. The bow was then flexed slightly by pressing outward with knee and elbow, a turn was taken with the bowstring around the top of the bow and knotted with half-hitches (pl. v, *e*). On some bows, such as the one shown in pl. v, the bowstring is cushioned at either end on wrappings of guanaco back sinew.

They gave a finishing touch to the bow with a coat of white paint made from clay (*kaístrrh*) and water. Thereafter both wood and bowstring were frequently greased that they should not become too dry and lose any of their power.

ARROW-MAKING

While the Ona bow was wrought with great care and is a serviceable weapon, the acme of Ona ingenuity and craftsmanship found expression in the making of arrows (*yah*^{n}). Four kinds of wood were used for the purpose. The best of these was a yellow wood from a holly-like tree (*Pernettya mucronata*), known to the Ona by the same name as the arrow itself, *yah*^{n}. When obtainable, this wood was always used for arrows, but it did not grow in the open plains of the north and east, so that substitutes were necessary. The first of these was barberry (*Berberis buxifolia*), called *metq*, which is common in the Rio Fuego district. Another, called *góorrh*, is a fashine (*Chiliotrichum amelloideum*) found in the northeastern portion of the island. More rarely a kind of currant bush known as *shíterhén* was employed.

All these woods are strong and light, but they grow twisted and bent. Hence, when they had been split into four pieces of proper length and roughly rounded, it was necessary to straighten them. This was done by heating each piece over a fire and bending it in the teeth.

Next a piece of skin was doubled and placed across the hand to protect it while the arrowshaft was worked down to the proper size with the same scraper (*teklek*) used in bow-making. Great was the care taken during this operation, for the arrow must be tapered to either end with nicety. The final straightening of the shaft was accomplished with both the scraper and the teeth. At this time the nock was cut.

While the scraping proceeded the smoothing stone (*ham k'yarr*)

had been standing near the fire, so that it was now thoroughly warm. This is a block of coarse stone (fig. 27) across which run one or more grooves. In the grooves the arrowshaft was rubbed back and forth, pressed against the stone by a bit of fox-skin (*shoshróshtel*). A final polish was given by this skin itself (fig. 28), which soon became impregnated with dust from the smoothing stone. The result was a tapered, balanced shaft with a satin-smooth polish which might well be the envy of a furniture finisher.

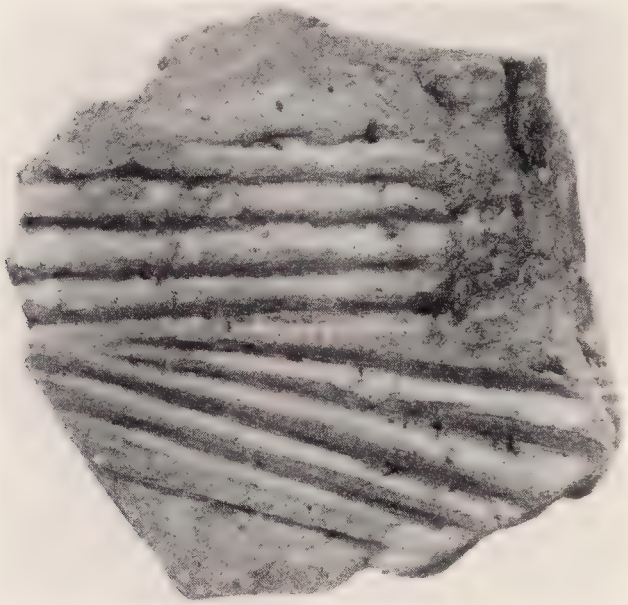


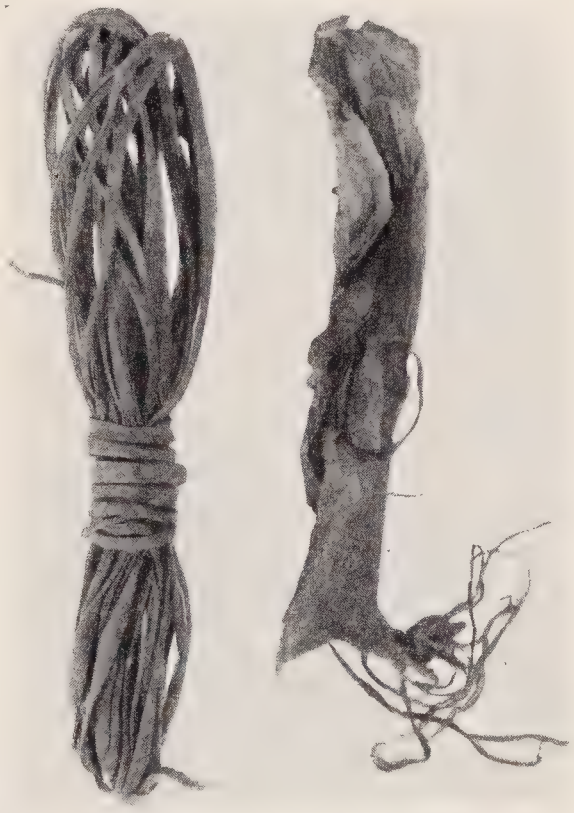
FIG. 27.—Ona arrowshaft polisher. Diameter, 9 in. (14/2399)

Next a bit of pitch (*tak*) was chewed while the tip of the arrow was warmed over the fire. When the pitch was softened a little ash was worked into it, and a tiny ring of the mixture attached to the arrowshaft just above the nock in order to insure a better grip (pl. v, *b*). This pitch, by the way, comes from the wrecked ships with which the turbulent Magellanic waters have supplied the natives since the sixteenth century. Small bits may be picked up on the beach at times. The Ona think it may be the excrement of whales.

FIG. 28.—Ona polisher of skin. Length, 5 in. (14/2411)

Both ends of the arrowshaft were now coated with white clay diluted in water. This process (*kaístrrh yahⁿ tímeren*) was not esthetic but utilitarian, for the lashings of the head and feathers were thus afforded a firmer grip on the wood.

The two feathers used on arrows normally were those of wild geese, especially the upland goose (*kaikén*), but swan-, vulture-, and eagle-feathers were also employed. Tehuelche arrows, according to Oviedo (lib. XX, cap. VI), were tipped with three feathers. The Ona word for feather is *shitrrh*, but the arrow feather is *sho shitrrh*, meaning the correct feather. This distinction they made because a right-handed man used feathers from the bird's left wing, and vice versa. The proper feather secured, with a knife they split it in two, trimmed it, and attached it to the shaft with spiral lashings (pl. V, *b*).



a *b*

FIG. 29.—*a*, Thong of guanaco-hide (14/2414). *b*, Guanaco back sinew (14/2413). Length as shown, 15 and 13 in.

Lashings (*yuh*) both for feather and point were obtained from the skin muscles on the back of the guanaco (fig. 29, *b*). The

FIG. 30.—Ona chipping tool. (After Gallardo.)

sinew was softened in water and split to paper thinness. The feathers were secured with spiral lashings carefully inserted through the plumes. As many as twenty turns were used to attach feathers

only an inch and a half long. When the fastening was complete it was dried by propping the arrow on a log so that it projected over hot coals or ashes, but far enough away to prevent it from burning.

a

b

FIG. 31.—Ona sharpening stones: *a*, for steel; *b*, for bone. Length, 4 and 6 in. (14/2419, 2386)

So much for the arrowshaft; we must now see how the arrowpoint was made. Long ago the Ona used stone points, but after coming in contact with Europeans they made glass points, normally fragments of bottles worked down to the proper shape and size. The Ona chipped by pressure exerted with a small guanaco-bone tool (*ko heúrrhásh*), illustrated in fig. 30. This implement in time became too blunt and was sharpened again on a piece of coarse stone (*yarr heúrrhásh*) shown in fig. 31, *b*. When at work they usually protected the hands with a bit of fox-skin in order to avoid being cut by the glass. Usually they worked on several arrowpoints in rotation, holding in their mouths those with which they were not actually occupied. This, they said, warmed the glass, made it less brittle, and therefore easier to flake.

The object of the chipping was to create a razor-sharp triangular blade such as appears in fig. 32, *a*, and to reduce the thickness of the glass to a little more than one-sixteenth of an inch. Diagonal

notches were then sunk from the corners to make the tang, resulting in the characteristic form seen in fig. 32, *b*. A good workman could finish such a point in ten or fifteen minutes.

Evidently the shape of the arrowpoint did not change for a long time, for ancient stone blades are like the modern ones. Occasionally points of this type have turned up in Patagonia and central Chile, but the common Patagonian point (fig. 32, *c*) has its tang and barbs set in a manner totally unlike the Fuegian.

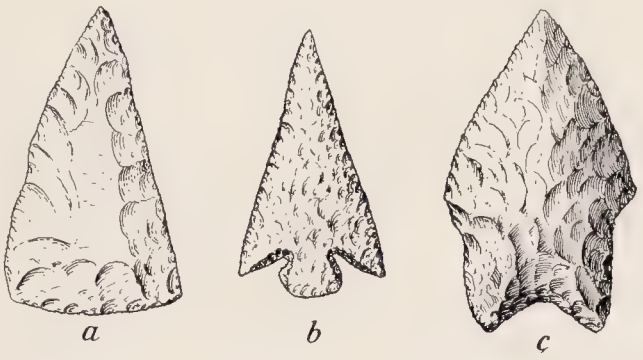


FIG. 32.—Arrowpoints. *a*, Unfinished Ona glass point (14/2408); *b*, Ona glass point (5/8546); *c*, Patagonian stone point (12/7377). Length of *a*, 1½ in.

After completion, the arrowhead was attached to the shaft with thin guanaco-sinew (pl. v, *c*), dried over warm ashes in the same manner as in securing the feathers.

Simple as the Ona arrow seems to the eye, we see from the description of its manufacture that the process was complicated beyond all expectation and that many substances were required. To recapitulate, the materials used in each arrow were six in number:

(1) wood
(2) pitch
(3) clay
(4) guanaco-sinew
(5) feather
(6) glass (or stone)

To shape and join these substances the Ona used seven of the nine tools known to them:

(1) wood scraper
(2) sharpening stone for same
(3) straightening stone
(4) fox-skin polisher
(5) chipping tool
(6) sharpening stone for same
(7) knife

With the tools and materials at hand, the steps in the manufacture may be listed as:

(1) splitting wood for shaft
(2) rounding the shaft
(3) straightening the shaft by heat
(4) straightening it by pressure

(5) tapering the shaft
(6) cutting the nocks
(7) polishing the shaft on stone
(8) polishing the shaft on skin
(9) softening and applying pitch
(10) splitting feathers
(11) softening sinew
(12) attaching feathers
(13) chipping the point
(14) attaching the point

Fully to understand the extraordinary pains and care lavished by the Ona on their arrows we must add to these processes the labor of gathering the six listed materials from the beach, the plains, and the mountains. Only excellent results could justify such painstaking toil, and these the Ona attained.

THE QUIVER

The Ona quiver, made from the hide of the hair seal, was called *íĭl*, a word they also employed for rifle. To manufacture the quiver, a hide was cut in a rectangular pattern of suitable size and shape. This was doubled over and sewn up the side, while at the bottom (as seen in fig. 33) a small oval piece of hide was inserted

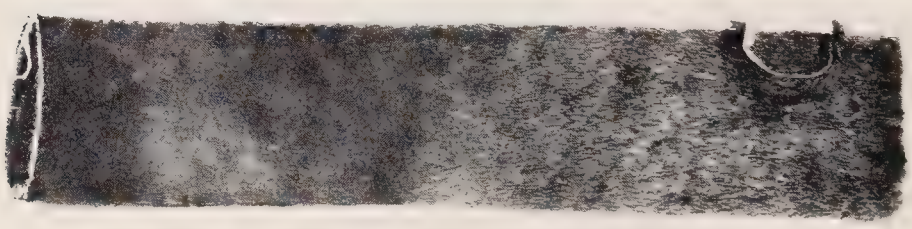


FIG. 33.—Ona quiver. Length, 33½ in. (14/2398)

and stitched into place. Were it not for this flat bottom the delicate glass points would have been jammed against one another and thus become broken. On the upper end of the quiver there is a small loop of hide by which it was hung out of reach of dogs when in camp.

The Canoe Indians are said to have used a quiver similar to the Ona type, but the writer has never seen one. The Tehuelche used no quiver, but inserted their arrows in a narrow woven fillet encircling the head so that they projected above like a crown.

USE OF THE BOW

In shooting (fig. 34), the Ona gripped their bows in the middle, often with the forefinger extended along the path of the arrow; they held them not vertically but diagonally, so that the arrow

passed not beside but over the bow. The bow-arm was not held straight, but was bent a few inches toward the body and snapped straight at the moment of discharge to add momentum to the arrow.[1] The nock of the arrow was grasped and pulled with the thumb and forefinger, but, when it was desired to pull strongly, one or more of the other fingers were laid directly to the string. When fast shooting was called for, the quiver or the arrows themselves were held in the teeth so that they could be reached quickly.

On the march the bow and quiver were carried in the left hand, which also held the skin cape wrapped around the body. A single motion of the arms served to bring the bow into position and to cast off the encumbering cape.

Children were given small bows with which they learned not only to shoot but to dodge one another's blunted arrows—an art on which their very existence might depend.

FIG. 34.—An Ona bowman. (From Alberto M. De Agostini, *I Miei Viaggi nella Terra del Fuoco.*)

The extreme range of the Ona bow was not far short of 250 yards. The longest actually measured arrow-flight known to the writer was made by Mr. William Bridges and covered more than

[1] In fig. 34 the bow-arm is held straight in order to maintain the pose.

210 yards. But this distance would have been much greater had not the arrow been shot up a hill (seen in pl. III, top), so that it landed nearly 100 feet above the starting point of its flight. However, such extreme distances had no relation to the ordinary hunting range, which was well under 100 yards, because the guanaco is an animal difficult to kill even with bullets, and, as the Ona did not relish having their arrow carried away by a wounded but not incapacitated animal, they fired only when and at such distance that they might expect to make a kill.

As for penetration, the writer has seen a headless arrow, discharged from an old and dried-out bow, carry 165 yards and bury itself for about six inches in hard, sun-baked gravelly soil. A story is told of an Ona, who, running from enemies, stooped to pass beneath a bough. At that instant an arrow struck him in the thigh, passed through, entered his body, and pierced its entire length, so that the head of the arrow protruded beyond his collarbone.

HUNTING AND FISHING

The Ona are expert trackers. Once a young Ona was employed by the governor at Ushuaia to track an escaped convict, a pair of whose shoes he was shown. For several days the Indian was seen around the outskirts of the town and finally he reported to the police that their quarry had not left Ushuaia. This news was received with scorn and the Ona was accused of being too lazy to go after his man. However, the convict had hidden himself in the town, for he hoped to escape on a vessel that was loading; but as she did not put to sea when expected, his food ran out, and he had to give himself up. The Ona had examined every one of the hundreds of footprints leading out of the town and had correctly deduced that the prisoner had never left it.

Guanaco was the chief game sought by the Ona. It is, as we have said, an animal of great vitality and difficult to kill even with a rifle. Therefore the Indians rarely discharged arrows at the guanaco except at close range. The favorite shot was quartering from behind, so that the arrow might strike behind the ribs and penetrate the viscera without encountering bone. Fox, seal, and sitting birds, especially the upland goose, were also brought down with bow and arrow.

Methods of hunting were essentially simple. In moving camp the women and children followed the valley floors while the men

kept on higher land on either side. Feeding guanaco startled by the former fled to the heights where the hunters were waiting for them. Guanaco also were stalked. Of the very elaborate pits for bowmen and game drives described by C. W. Furlong (1912), the writer could learn nothing from either the Ona themselves or old European settlers. It seems improbable that the Ona ever combined in sufficient numbers to execute the drives, and one wonders how they dug the pits in frozen ground during the winter.

When a guanaco had been slain, the hunter immediately cut out the small lumps of fat behind the eye-sockets and ate them as a special delicacy, as did the Tehuelche. If he were hungry he might later eat a certain part of the intestine usually found clean, and perhaps also the heart. Then he set about skinning his kill, which was done in a never-varying order. The young guanaco was not skinned on the spot, but was immediately gutted. The stomach was emptied and edible viscera such as the liver were packed in it. The head and legs were then forced into the abdominal cavity and the whole animal, lashed into a neat bundle, was carried home. The weight thus borne might be as much as two hundred pounds.

Returning to his windbreak the hunter would silently hand his bow to his wife to hang up and throw the meat on the ground near the fire or hang it on a tree. No one would pay any attention to it, for it was considered bad manners to show elation at the success of the hunt or merriment at the prospect of food. After sitting around in sullen silence for half an hour, the hunter would casually ask his wife why she did not cook some meat, and she would then do so. But until given leave she would not touch the meat, as it was his but not her property.

Seals were killed with arrows, and sometimes they were caught in strong nets of seal-hide. The example we illustrate in fig. 35 measures four by eleven feet. It was found in a long-abandoned wigwam near Lake Fagnano, and evidently it was made many years ago. The meshes today are uneven because breaks have been repaired by knotting the ends of the ruptured sections.

Cururo were dug up and killed with a stick. Apparently the Ona did not regularly use a club like their neighbors. "They beat their wives with bow staves," I was told.

Fish were taken by the Ona women in pools on the beach at

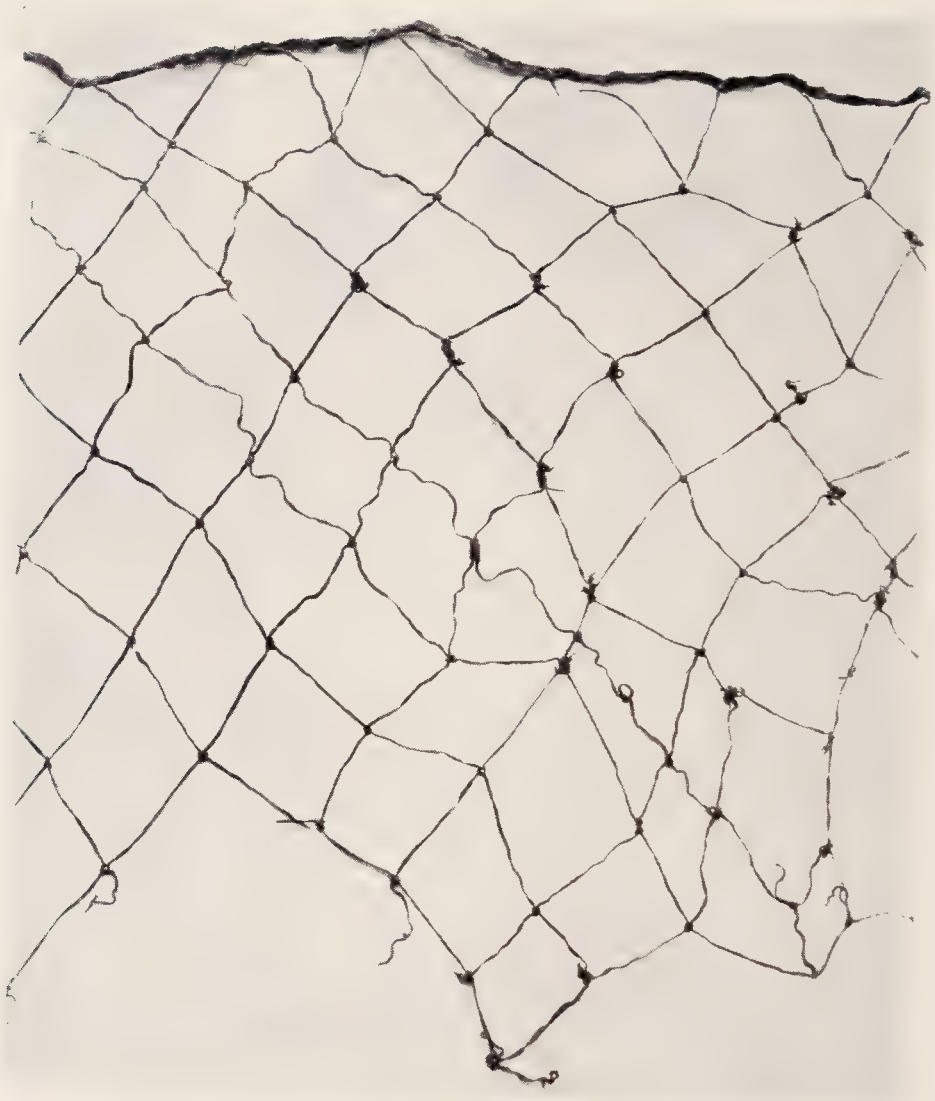


FIG. 35.—Ona seal-net. Width, 3 to 4 ft. (14/2387)

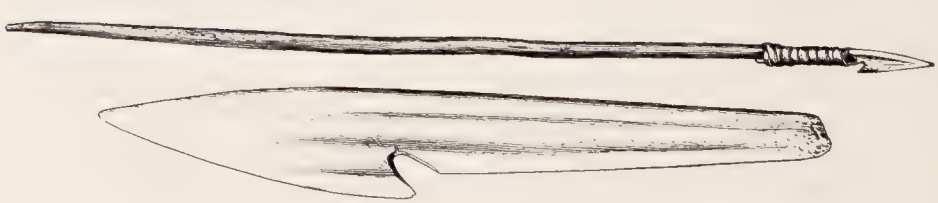


FIG. 36.—Ona fish-spear. Length, 37 in. (14/2396)

low tide with the aid of a short spear (fig. 36). The shaft of the weapon is of wood, painted red, while the point is of guanaco-bone. Evidently this little weapon—it is only three or four feet long—was adapted by the Ona from the large heavy spears of the Yahgan. Pictures of Ona women fishing have been published by Gallardo (1910) and De Agostini (*a*). Members of this tribe are said to have taken fish with weirs and nets, but the writer saw neither.

Birds were caught with snares (fig. 36A, after Gallardo) like those used by the Yahgan. They also captured birds, especially those roosting on the cliffs of the east coast, with the aid of a torch, either a bark affair like the Yahgan torch or else a bundle of long dry grass-stalks (*kekl*). The method employed was to go down to the beach beneath a cliff during the night with the torch in one hand. The birds aroused and dazed by the light often flew into it and were struck down or seized.

The southern Ona killed birds with a sling, but it is doubtful if this weapon was in use among the northerners. From this distribution it might well be argued that the Ona had learned the use of the sling from the Yahgan, yet there are several reasons for believing the contrary. In the first place, the Ona name (*shínkai*) is not related to the Yahgan (*watewá*). Secondly, the Yahgan sling has braided strings, while the Ona used strips of guanaco-hide. Thirdly, the methods of discharge were different, for the Ona wrapped the long end around the forefinger, while the Yahgan inserted

FIG. 36A.—Ona bird-snare.

it between the fourth and the little finger, so that it extended across the palm of the hand. Finally, as pointed out by Cojazzi (p. 329), the use of a sling is mentioned in a supposedly ancient Ona legend.

Social Organization

Clans, gentes, moieties, and the other divisions commonly found in primitive society were unknown to the Ona, who were split into bands based on consanguinity and the necessity of maintaining their right to hunt over certain territory. Each such band controlled a fixed area which usually extended from the mountains to the sea and thus embraced a diversified food-supply. Within this region, except in the case of war, or wrestling, or the stranding of a whale, large gatherings rarely took place, for large encampments with many dogs frightened the game and hence became an economic liability. An informal authority over the people of a given district might be exercised by its ablest member, but such leadership became apparent only in times of stress.

Kinship

Among an exogamous people who, like the Ona, accept group responsibility, it is quite natural that kinship should be a matter of exact knowledge and that every relative should be designated by an exact term. Descent and kinship were calculated in both the male and the female line, the terminology being complicated by inability to express abstract relationship. Thus it is necessary to add "my," "your," "his," or "her" (*ya*, *ma*, or *ta*) to each name, and the resultant form is often contracted.

Relatives in general were called *ya k'chon*, "my man," or *ya k'na*, "my woman"; the latter also means "my wife." Unrelated individuals were described as *táni ya k'chon*, "that is not my man," or *tónika hánash pemrrh*, "from far away he is."

The table of relationship terms subjoined was obtained from Mr. William Bridges and later checked on separate occasions by two Indians. To save space the expressions for cousin are given only in the first person, as they are all compounds based on elements given in full elsewhere.

TABLE IV.—ONA RELATIONSHIP TERMS [1]

FATHER

my father	*yaaín^{e}*
your father	*maaín^{e}*
his (her) father	*taaín^{e}*

BROTHER [2]

my elder brother	*yorrek*
your elder brother	*morrek*
his (her) elder brother	*torrek*
my younger brother	*yachi*
your younger brother	*machi*
his (her) younger brother	*tachi*

UNCLE

my mother's brother	*yichéen*
your mother's brother	*machéen*
his mother's brother	*tachéen*
my father's brother	*yipóot*
your father's brother	*mapóot*
his father's brother	*tapóot*

GRANDFATHER

my mother's father	*yam k'aín^{e}*
you mother's father	*mam k'aín^{e}*
his mother's father	*takám k'aín^{e}*

my father's father, *yaaín^{e} k'ain^{e}, yihoq*
your f's father, *maaín^{e} k'ain^{e}, mahoq*
his father's father, *taaín^{e} k'ain^{e}, tahoq*

HUSBAND

my husband	*yashi*
your husband	*mashi*
her husband	*tashi*

SON

my son	*yilal*
your son	*malal*
hisson	*talal*

MOTHER

my mother	*yam, yami*
your mother	*mam*
his (her) mother	*takám*

SISTER [2]

my elder sister	*yorrkan*
your elder sister	*morrkan*
his elder sister	*torrkan*
my younger sister	*yaan*
your younger sister	*maan*
his younger sister	*taan*

AUNT

my mother's sister	*yipóon*
your mother's sister	*mapóon*
his mother's sister	*tapóon*
my father's sister	*yikán*
your father's sister	*makán*
his father's sister	*takán*

GRANDMOTHER

my mother's mother	*yáme*
your mother's mother	*máme*
his mother's mother	*táme*

WIFE

my wife	*ya k'na, yashí*
your wife	*ma k'na, mashí*
his wife	*ta k'na, tashí*

DAUGHTER

my daughter	*yitam^{n}*
your daughter	*matam^{n}*
his daughter	*tatam^{n}*

FIRST COUSIN [3]

my elder brother my father's brother's son	*yorrek yipóot k'lal*
my younger brother my father's brother's son	*yachi yipóot k'lal*
my elder brother my mother's brother's son	*yorrek yichéen k'lal*
my younger brother my mother's brother's son	*yachi yichéen k'lal*
my elder brother my father's sister's son	*yorrek yikán k'lal*
my younger brother my father's sister's son	*yachi yikán k'lal*

[1] For the alphabet used in recording native terms see page 215.

[2] To specify brothers and sisters more exactly it is necessary to use some such expression as "the second daughter of my mother."

[3] Cousins were addressed as "brother" or "sister."

my elder brother my mother's sister's son	*yorrek yipóon k'lal*
my younger brother my mother's sister's son	*yachi yipóon k'lal*
my elder sister my father's brother's daughter	*yorrkan yipóot k'tam*^{n}
my younger sister my father's brother's daughter	*yaan yipóot k'tam*^{n}
my elder sister my mother's brother's daughter	*yorrkan yichéen k'tam*^{n}
my younger sister my mother's brother's daughter	*yaan yichéen k'tam*^{n}
my elder sister my father's sister's daughter	*yorrkan yikán k'tam*^{n}
my younger sister my father's sister's daughter	*yaan yikán k'tam*^{n}
my elder sister my mother's sister's daughter	*yorrkan yipóon k'tam*^{n}
my younger sister my mother's sister's daughter	*yaan yipóon k'tam*^{n}

Marriage

Marriage of blood relations down to second cousins was regarded as incest by the Ona, so that a man usually was forced to seek a wife at a distance. At times this could be done in friendly fashion by making arrangements with the girl herself and her father, in which case it was customary to make gifts to the father of the bride. Often, however, a wife was secured from a hostile Ona group, or even from one of the other Fuegian tribes. This might be accomplished by stalking a strange woman until the chance occurred to cut her off from her family—silence and obedience being enforced by a threat to arrow her. Also women were secured by group warfare, for the families of the slain might be captured by the victors. Encampments were raided at times for the sole purpose of capturing women.

Polygyny was practised when possible by the Ona, though it was rare to find a man with more than two or three wives at the same time. Halimink, an Ona of whom the writer saw much, had had seven wives and was looking for an eighth. The first of his wives, by that time an old and feeble woman, was still alive. Halimink's oldest living son, Nana,[1] had married a mother and her daughter—a custom often found among the Fuegians. Marriage of two or more sisters to the same husband was also of frequent occurrence.

In recent years, with the great diminution in numbers of all the Fuegian tribes, the normal marriage systems have been upset, for the men have been put to it to find wives at all.

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[1] This man has been described by Rockwell Kent. He was unusual among the Ona in having a mustache which hung at either side of his mouth like black icicles. He enjoyed considerable local fame as a killer and was generally believed to have done away with the daughter mentioned above, as she mysteriously disappeared.

Children

The Ona, from what the writer saw, were as kind to their children as most Indians, who in general are noted for indulgence toward their offspring. This statement does not imply that the parents did not maintain rigid discipline, but it was always tempered with genuine affection.

At the time of birth, according to Gallardo (p. 229), the Ona mother brings in a load of earth that the child may be sturdy, and after delivery has taken place she washes herself if a sufficient body of water is nearby. For some time thereafter certain foods are tabooed. During this critical period the father is expected to maintain the aloof indifference which these stalwart people were trained to exhibit to hunger, fatigue, and cold—indeed it was considered bad form to display even the slightest curiosity as to the occurrence of the event or the sex of the new-born.

Feuds

The Ona were a hunting people, and as a result they lived in small family groups which could move quickly and easily. Each group had definitely located hunting rights, and to trespass on another's territory was a cause for war. Even a dog, wandering to alien precincts to worry the game, might start hostilities. Wife-capture also led to fighting. Sometimes a neighboring group was attacked simply because opportunity offered and it was thought advisable to grasp the chance to reduce the strength of possible future enemies.

At the moment of white colonization of Tierra del Fuego, during the last quarter of the nineteenth century, the island is said to have been over-populated; hence hunting rights were more aggressively maintained than ever. Indeed it is stated by some that Ona arrows reduced the population as much as ever the merciless rifles of professional head-hunters. Feuds, once started, lived long.

When a grievance arose, three methods of procedure were open to the Ona: (1) there might be war, (2) there might be a wrestling bout, or (3) an individual duel. These practices and the method of peace-making we shall examine.

I.—War

Warriors in Tierra del Fuego were garbed in no ceremonial costume, nor was warfare hedged about by any restrictions. The

first intimation of attack was the swish of hostile arrows, and the first move was to run for shelter until the strength and nature of the attack could be determined. Relatives had to be summoned and the largest possible company assembled before attempting a counter-movement. Some time might therefore elapse before the attack was returned.

The Ona usually did not torture their male captives, but killed them on the spot. Women and children who fell into their hands were sometimes killed in the heat of combat, but were often spared and incorporated in the victorious group.

II.—WRESTLING

While wrestling was a sport to be indulged in among friends, it was also an alternative to war, resorted to when the attacked party was not in a position to return the aggression. While warfare was conducted with but little organization and no formality, the wrestling bouts were enacted with all the punctilio of an eighteenth-century duel. A formal challenge initiated the contest. It was usually carried by an old woman, a relative of both parties, if possible, but too old in any case to be desired as a captive. Through her a day and a place were set. There was never an act of treachery at such meetings. War was not the order of the day, so they left all arms behind.

The first arrivals at the place selected were the challengers. Everybody came—men, women, and children—and formed a semicircle with the men in front. Then came the challenged party and formed a similar group facing the others but leaving an open space some fifteen yards across between the two sides (fig. 37).

Next an old man of the challengers harangued their opponents, the original aggressors in the feud. Now the Ona language is harsh, guttural, and explosive, so that even a friendly argument to unaccustomed ears sounds like a violent altercation, but on this occasion the voice was not raised. The challenged party, in a quiet tone but with deadly seriousness and great detail, were told what they had done and just what the challengers thought of them. One of the challengers now stepped across the open space, stretched out his left hand to an opponent, who grasped it with his right hand and allowed himself to be pulled to the middle of the ring. There they gripped each other around the body, each with his right arm beneath the other's left, and the contest began.

There seem to have been few rules. Biting, indeed, was not considered *comme il faut*, and it was thought manly to stand erect. Grips were shifted and the men strained, often twisting the neck by the jaw, until one of them was thrown. This however did not constitute victory, for no man was beaten who was willing and

FIG. 37.—Ona wrestling contest. (From Alberto De Agostini, *I Miei Viaggi nella Terra del Fuoco.*)

able to continue. When one man was exhausted, another from his side took his place, or sometimes a special opponent was selected by the man who happened to be in the ring. Thus the wrestling continued, perhaps for many hours, until no more challenges were forthcoming.

Then the two sides parted with scowling glances and angry words, threatening what they would do to one another when they next met. But during the wrestling they were very polite, and they did not praise their own men directly but rather their opponents, saying such words as "You must be a fine man to do so well against my brother."

Such then were the wrestling bouts. That they were not tame affairs may be judged from the fact that Mr. Lucas Bridges, himself well over six feet and unusually strong and agile, emerged from

one of these contests with two broken ribs. He had lent an Indian his rifle in order to hunt guanaco, but instead the Indian had used it to kill two men. Hence Mr. Bridges and his brothers were included in the challenge to the angry wrestling which followed.

III.—THE DUEL

If a man belonging to an aggrieved group had a personal enemy in a hostile band, and if his hatred could be satisfied neither by wrestling nor group-fighting, he sent his enemy a challenge. On an appointed day he would appear stripped naked at the enemy encampment and would halt about seventy yards away. His opponent would then come out in front of his windbreak with a bow and a quiver containing six or eight arrows, drop on one knee, and start shooting. These arrows the challenger dodged. To show his scorn of enemy marksmanship he moved as little as possible to avoid them, and after each shot he advanced a few yards toward the archer. Thus, if he were brave and agile, he might be within twenty-five or thirty yards of his enemy when the last shaft was loosed. Then the two changed places, and the challenger, who had subjected himself to hostile arrows, had his chance to kill or wound his enemy, or to shame him by keeping him at a distance with accurate marksmanship. If the challenged warrior were not an adept at arrow-dodging, a relative might take his place, so that the group as a whole would not be disgraced by a clumsy performance.

IV.—MAKING PEACE

Peace overtures were initiated by a third party and usually were not successful unless both sides could be persuaded that they had gained the advantage. If a meeting were arranged, each man brought five arrows. From these they removed the heads and wound a strip of rawhide around the shaft, about three-quarters of an inch from the tip, to form a disc, so that the arrow would wound but not kill. Reaching the appointed place, each one of the aggressive party sought out the man he regarded as his most personal enemy and gave him the arrows. Then he retired about fifty yards away.

The man who had received the arrows, with scowling looks put four in his mouth, strung the fifth, and shot at his opponent just

as hard and as fast as he could draw bow. As the first shot left the bow the unfortunate target began to run at full speed toward the archer, dodging arrows as he came. Sometimes a man would escape untouched, but more often he received a wound before all the arrows were discharged.

When all the aggressors had thus run the gauntlet, their opponents' turn to shoot at their enemies came, and thus by all-round blood-letting the feud was finished. It is to be noted that each man had a chance to shoot at his personal enemy, and that no arrow which he had not himself prepared was discharged at any individual.

Amusements

Although repressed by a code which forbade the display of emotion or eagerness, the Ona were essentially a fun-loving people with a keen sense of humor and a fondness for horse-play. Yet they had little in the way of formal amusements. Wrestling in earnest we have already described, but in addition the Ona indulged in friendly wrestling as a sport. Target-shooting with bow and arrows or dodging blunted arrows often assumed the nature of play, yet essentially these exercises were training in manly activities necessary to the maintenance of life itself. Every Ona must expect to "get" his man or himself be arrowed.

Foot-racing was another of their sports. Sometimes the runners would encircle a lake. More often, however, two groups would start at opposite ends of the course and would run to meet at a point estimated to be in the middle.

The Ona also indulged in a simple ball game which consisted of no more than throwing and catching the ball. The ball (*cháto*), about the size of a baseball, is made from the skin of a large gull (*kaprrh*) known locally as the "black stinker," which looks rather like an albatross. It is stuffed with dried grass.

Deportment

In connection with hunting and fighting we have seen that these Indians had very distinct ideas about what constituted good manners. Living in a state that placed fortitude and physical endurance at a premium, it is but natural that their code of etiquette forbade the display of emotion or eagerness which might be mistaken for cowardice and agitation. Consequently the Ona youth was

schooled to endure cold, fatigue, hunger, and thirst without outward display of his feelings.

Many explorers of Fuegian waters have commented on the indifference of the natives to the wonders of European civilization displayed to them. But the failure has been not on the part of the Fuegians to admire, but on the part of the Europeans to discern the cause or even the existence of native reticence. Thus Hawkesworth [1] writes of the Haush who boarded Cook's ship at Good Success bay that "they eat some bread and some beef, but not apparently with much pleasure, although such part of what was given them as they did not eat they took away with them." To have gobbled their food in the presence of foreigners would have been to the natives the height of bad manners. This is well illustrated by the way the Ona treated a stranger of their own tribe.

If a stranger appeared at an Ona encampment unaccompanied by a member of it, he was likely to be deemed a poacher and promptly arrowed, so only in the most desperate circumstance would a man approach a group where he was unknown. When brought in by a friend, a stranger would sit down some fifty yards away from the camp and take no notice of what was going on. A few minutes later the owner of a shelter would call out to him to visit his wigwam, and perhaps ten minutes later the stranger would stroll up to the outer circle of those around the fire, and, being duly urged, in time would sit beside the fire. Meat was then cooked, but the stranger was not supposed even to look at it. When a piece was handed to him he would take it with the utmost indifference and wait quite a while before eating it. It was considered a compliment to the host to hand over one's bow and arrows and ask him to keep them dry.

Under such rigorous etiquette it is easy to understand why shipwrecked crews, ignorant of native usage, fared badly at the hands of the Ona.

Initiation

All young men in the old days had to pass through a period of initiation lasting for about two years. During this time they were regarded as undergraduates or probationers (*klókten*). Most of the period was spent in solitude, except for the aid and company of a single dog, living on the lean meat of adult male guanaco that

[1] Ed. 1773, vol. II, p. 44.

they might become strong and swift. For several weeks the novitiate was brought frequently to the initiation lodge (fig. 38), where he was terrified by masked men representing various spirits. Here also he was instructed in tribal lore and inculcated with all manly virtues, while he had to prove indifference to pain by allowing wood splinters thrust in his arm to burn themselves out against his flesh. Finally, when deemed fit for manhood, the true nature of the spirits that had terrified him were revealed, after he had been sworn to secrecy especially as regards the women and children, who were terrified at intervals by the masked apparitions.

FIG. 38.—Ona ceremonial lodge near Laguna de Pescados.

The native explanation of these rites was that long ago there was a petticoat government, and the women held the men in abject slavery, because they, by certain magical ceremonies not known to the men, could summon fearful spirits to their aid. There came a day when the men learned that the apparitions that terrified them were only their wives in disguise, so they forthwith fell upon the women and killed all those initiated in the secret, with five exceptions. Of these, one was thrown headlong in the fire, but she crawled out and ran to the sea, where she became

the moon. Today you may see the scars on her face. A second was cast into a waterfall and amidst its spray was changed into the snowy-white kelp goose (fig. 90, *b*). Another became the steamboat duck, the fourth a swan, and the fifth a woodcock (Strickland's snipe?). After this wholesale slaughter and metamorphosis of the women, the Ona men talked it over and decided that the system was a sound one, and so they turned it to their own account to keep the women and children on their good behavior. Possibly this tale reflects an ancient matriarchal system subverted long ago by masculine aggression.

The lodge in which part of the initiation was held and whence issued the spirits to cow the unitiated was called *hain*^{e}, a word obviously connected with *kina*, the central Yahgan term for the initiation lodge. Among the Ona (and probably also the Haush and eastern Yahgan) the lodge was a large solid tipi of heavy logs partially covered with sod. Front and back views appear in fig. 38 of the lodge built for Gusinde in 1922. Each log was assigned to an individual and had a name such as "seal," "kelp-goose," "duck," "grass," "sea." I could not discover any totemic bond between these names and the individuals who sat in front of them. The doorway, which faced away from the encampment, was very wide. Within were benches.

The masks are tall and conical like the Yahgan masks (figs. 92, 93), and are made of hide or bark appropriately painted. According to Barclay, who obtained his information from Mr. Lucas Bridges, the characters represented were:

"*Sh'ord*, a malicious underground spirit with crooked legs. He was represented covered all over with the feathers of birds (stuck on with grease).

"*Hach'i*, the spirit of the moss and lichen-covered rocks. He was painted slate color, with daubs of red and yellow clay, and wore horns.

"*H'alpin* was a woman, the spirit of the clouds and mists. She was dressed all in white, and had a very long head. This shape was given by binding twigs to the back of the head, which were then covered with skin and painted.

"*Tan'u* [1] was the spirit of the streams and lakes. She was the sister of H'alpin, and was adorned in the same way except that her color was red.

[1] This name is given as *Fan'u*, a typographical error, as there is no *f* in Onan.

"*K'mantu* [1] was the spirit of the beech forests, and was clothed with tree-bark and moss.

"*Hash'ai* was very squat and had a claw on the forefinger of each hand. He was always gathering firewood, but never made a fire. This spirit seems to have been an embodiment of that nervous fear which makes itself felt in the deep forests, when branches creak and twigs snap for no apparent reason. Finally there was—

"*Olimin'kke*, the little surgeon-doctor, who attended to the ailments of all this crew."

Cojazzi gives a similar list with an additional name; the interpretation is slightly different from that of the Barclay-Bridges list.

Schort: spirit of white stones.
Halpen: spirit of the clouds; wife of Schort.
Táne: sister of Halpen.
Gketermen: son of Schort.
Harciai: spirit of black stones.
Gkmánta: spirit of live trees.
Háse: spirit of dead trees.
Holemin: spirit of the sky.

Yahgan, Haush, and Alacaluf initiation ceremonies differed in detail from the Ona rites, but were so essentially similar that interborrowing must have taken place. Of Tehuelche initiation rites for boys we know practically nothing, but Musters (1871, pp. 76, 175) has left an account of the ceremony for girls which shows little resemblance to Fuegian practice beyond the fact that a special house was set up and dances were held.

In the Amazon valley, however, we find an initiation and dance complex strikingly like that of Fuegia. Without going into detail we may list the parallel features from the Amazon region as follow:

1. The use of tall conical masks that conceal the identity of the wearer.
2. Ceremonial lodges from which women and children are rigorously excluded.
3. Belief that the authority and superiority of man must be maintained, and the women and children impressed with their inferiority by these ceremonies. [2]
4. Infliction of physical pain upon the novices.

[1] I have changed *c* to *k* to conform with the phonetic system herein employed.
[2] See F. Gow-Smith, The Arawana, or Fish Dance, of the Caraja Indians of Matto Grosso, Brazil; *Indian Notes*, II, 1925, p. 99.

Religion

The Ona, according to Gusinde (1924a) believed in a supreme deity called Temáukl, who created the heavens and the earth. This god had the giving of life and death, and the Indians openly reproached him when death occurred. Beauvoir (p. 166) says that Pimaukel (*sic*) was not a universal god but the first man, endowed with certain divine powers and the creator of much animal and plant life.

More intimately in contact with everyday life were a great number of local spirits. Sometimes these were the spirits of trees, mountains, lakes, or animals; sometimes they were the ghosts of mighty shamans of the past. In general they were to be avoided, or, if encountered, to be treated with respect, except by powerful shamans who could defy them with impunity. In addition to these spirits, the women and children were supposed to believe in the divinity of the masked apparitions seen during the *klókten* rite.

Shamans

Among the Ona certain men were accepted as having power to prophesy, to control the spirits of nature, and to cure or create sickness. This power was acquired by friendly association with the ghost of a departed master of the trade.

Sickness, said the Ona, was the result of some foreign object lodged in the body through the machinations of the moon or of some malevolent shaman. To effect a cure this must be removed. When summoned to attend a patient, the doctor painted himself in style and put on a kelp-goose down diadem (fig. 11). After an examination of the sufferer he informed the relatives of the nature of the illness and who had inflicted it. Next the sick man was stripped and seated on a guanaco-skin. Around him for some time walked the shaman, chanting incantations to break the spell of the disease. Then grasping his patient the doctor violently massaged the affected part. Finally the point of pain was lustily sucked, and then the shaman vomited forth the ostensible cause of the disorder—an arrowpoint, a pebble, a bit of wood, or some such object.

If a cure could not be wrought at once, then this process was repeated at the discretion of the physician. While at times it must have caused great pain to the sufferer, yet it is undoubtedly true that cures were effected. If the patient's case was pronounced

hopeless, he was strangled by his family in order to terminate his supposedly useless sufferings. Cojazzi writes that individuals in this critical state have been spared by missionary intercession, and, recovering, have lived for many years. The compassionate execution of the aged or infirm is a custom of world-wide spread. In the New World it extends from the Arctic to Tierra del Fuego.

Ona witch-doctors were thought to control the powers of nature. Mr. Lucas Bridges told Cojazzi (1914, p. 15) how he encountered a great storm when exploring Mount Hewhuepen. His Indian companions believed that the storm was sent by the spirit of the mountain, enraged at the intrusion of her privacy. To master this spirit a shaman was called into action, who defiantly discharged blazing arrows into the clouds. This measure failing, Mr. Bridges was asked to fire his revolver, and this had the desired effect, for the storm soon ceased.

Beliefs Concerning the Dead

When an Ona died his personal possessions were thrown away or burned in the house where he died (fig. 39), and his dogs were given to distant relatives. This was done partly in the belief

Fig. 39.—Abandoned Ona camp, showing destruction of houses after the death of an occupant.

that the dead man's property was not a good thing to keep and partly because its presence would constantly have reminded his family of their loss. For instance, the large arrowshaft polisher illustrated in fig. 27 had belonged to the father of old Halimink, from whom it was obtained. When the father died it was buried and abandoned. Years passed, but Halimink remembered the stone because it was a particularly fine one, so at length he dug it up and used it himself.

When death occurred, a certain amount of formal ululation was expected of the female relatives, and at times the breast and arms were lacerated. Among the men no set performance was expected; however, their grief was obviously genuine. For instance, Halimink often spoke of his wife (number seven) who had died three years previously, and said that he missed her greatly. But he never mentioned her name. All her property was burned on the spot shown in fig. 39. Yet in spite of his sincere grief, Halimink was rather regretful that the property had been destroyed because if the things had been kept he could have sold them to the writer and profited by the transaction.

The Ona believed in the future existence of the soul, yet thought the spirits of ordinary persons had no contact with this world. Only the souls of super-shamans had influence after death.

The body of the dead was wrapped in skins and lashed between saplings; it was then placed in a hole in the ground which was filled; the sod was carefully replaced, and finally a fire was built over the grave to remove all traces of interment.

Mythology

For the study of Ona mythology we have fairly rich material, though not so detailed as one would wish. Though abundant, the published Ona myths are often difficult of access for they have appeared in print in many countries and languages. It has therefore seemed well to summarize those tales that have come to my notice.

CREATION MYTHS

The Ona believed, according to Furlong (1915), that the first man and woman descended from the sky by means of a rope which broke so that they were forced to remain on the earth. This first man, named Pimaukel according to Beauvoir (p. 166), or Kenós according to Gusinde (1924a), made many of the plants and animals.

The Ona believed that there was once a great flood and attributed it to the machinations of their hero Kuanip. Also they had a legend [1] about bearded white men. In this we may see connection with the Viracocha-Quetzalcoatl myth cycle of more developed cultures. Evidently the white-hero cycle goes to the very base of New World beliefs.

HERO MYTHS

There is an elaborate myth cycle relating to the Ona national hero, Kuanip or Coan-yi-pej, a being with supernatural powers. It is to be noted that Kuanip was not a culture bearer but that he had much to do with the present state of things because he transformed various people into animals. The longest detailed account of Kuanip, recorded by Cojazzi (1914, p. 351 *et seq.*), runs as follows:

Kuanip was the Ona national hero. He was begotten in the earth, for his mother was a red mountain near Harberton and his father was Cape Kayel (a little south of Cape Santa Inés). When the Indians saw him, they asked: "Who is this? Who begot him? Whence does he come?" And others replied, "Son of the stone."

Kuanip grew up but remained incomprehensible to the Indians. Twice they tried to kill him, but as they were about to discharge their arrows into his back he turned suddenly and forbade them to move. And thus they remained until they died.

Siaskels was a bad man who lived on a mountain in the interior. His food was human flesh. One day he said to his friend Kuanip, "Please give me two of your sons, born of my sister Kokersé."

"Why?" asked Kuanip.

"To help me get the guanaco when the dogs kill them. I am old and the dogs eat the meat before I arrive."

So Kuanip lent his sons for two years. When the time expired he went to Siaskels' wigwam where he found his sons, but not the owner, who was hunting guanaco. "What does that man eat?" he asked one of the boys.

"He eats dung and human flesh the whole year round," replied the lad. And in fact they both had filthy hands, for their work consisted of cleaning the intestines of the people Siaskels killed. Kuanip growing angry then asked, "Where is Siaskels' sister?"

The sons replied, "She is up there making housetops with the skins of dead men and gathering up their hair."

[1] *Vide* Cooper, 1917, p. 162. The concept underlying the white god in the Americas has been discussed by Brinton in his Myths of the New World.

"Bring me flint!" cried Kuanip. He took it, and, rubbing it with his hands, cast it to the ground, exclaiming, "I command all things; never shall fire issue from this stone, and thus may this traitor die!" And thus it was; the flint no longer gave out fire.

When Kuanip was disposed to depart, his sons begged with tears that he should take them with him; but he did not desire it, and told them: "It is not fitting that ye come now, for if this beast comes and does not find thee, he is capable of playing me some dirty trick. But follow my counsel: when he bids ye look for firewood, go forthwith, and see that ye go to a greater distance each time. I will be on that hill called Siaxis. The fourth time ye carry firewood, come ye with me."

And it came to pass thus: One day the boys were carrying firewood and they escaped to the hill. Siaskels took note of it and followed them with his most famous hounds. And he was already certain of catching them, for the two fugitives had to cross a very broad river, when Kuanip, to whom all things were possible, caused the two banks to draw near together and his sons crossed easily and were reunited with him. Siaskels, believing that he could take advantage of the prodigy, jumped, and while he was in the air Kuanip returned the river banks to their former position, and Siaskels fell in the middle where it was deepest. Three hours he spent in the water and his back was aching so that he cried out:

"Who is trying to kill me in the water?"

Then from afar Kuanip asked: "Who are you? Why do you call?"

"I am Siaskels; I adore my native land; do not overwhelm me, my back hurts."

Suddenly the water disappeared and Siaskels got up and took the road to the hill Siaxis, where Kuanip was. When he arrived he said to Kuanip: "What have you done with the water? Why didn't you let me get up?"

Kuanip answered, "Because I didn't want to; but why don't you stand erect?"

"I cannot," replied Siaskels. "Put your feet on my back, because I am weary from struggling with the water and have lost all my strength."

Then Kuanip said to the boy who was nearest, "It is better that you get up and put your feet on Siaskels' back," and at the same time he ordered within himself that the boy's feet should become

knives. The lad put his feet on Siaskels' back and made three pieces of him which were stoned by the sons of Kuanip with missiles which they cast from slings. From the eyes of the dying one there issued two little flies, one called *zi-i-i* and the other *doi-doi*. Not content with this terrible punishment, Kuanip ordered five men to kill Siaskels' sister; and in order that she should not learn of their coming and that they should not hear her cries and laments, he commanded the birds to surround the house, singing and chirping. The envoys found her cleaning the hides of the dead, and set in wounding her until they left her dead. But before death she spoke with Kuanip and begged him, "Burn all my things." And so he did, after which her spirit (*men*) appeared to Kuanip and he asked it, "How are things up there?"

"Fine!" she replied. "Up there it is better than here; charming outlook and no illness."

Thereupon Kuanip left Tierra del Fuego; and to improve his lot he transformed himself into that red star which shines by night. According to Beauvoir (p. 202), Kuanip with his wife and two sons now form the Southern Cross.

TRANSFORMATION MYTHS

In the preceding section we have seen how Kuanip created flies and stars. There were many tales among the Ona of a similar nature, in some of which Kuanip again figures. Of these Cojazzi relates two, of which the first has been published also by Dabbene (p. 77).

Long ago, when the sun first pursued the moon, there was nothing but day, for the two traveled around the horizon. It happened that Kuanip wanted to take a young girl to wife; but she said she did not want to marry, with the sun and moon watching all the time. So Kuanip sang a beautiful song, ordering the sun and the moon to hide for a while. And so they did. However, with alternate rising and setting the days are getting ever shorter, so that ultimately it will be perpetual night.

The other tale is that long ago, before they became birds, Okrisen (the white male owl) and Oklta (the female bat) were brother and sister. Okrisen was the most handsome, strong, and dextrous hunter of guanaco. Oklta was the most beautiful of women. Neither of them wished a family, because Okrisen had never met a woman as delightful as his sister, while Oklta had never en-

countered a man so handsome and strong as her brother. Thus they lived a long time content with fraternal love.

But Kuanip appeared, and trouble ensued, for he fell in love with Oklta, who was by no means displeased. But Okrisen did not approve, and said to his sister, "Do not marry Kuanip, because he has other women, and, when he forgets you, you will be the slave of the others; you will not have guanaco to eat, nor skins to cover yourself, nor harmonious bird-feathers for adornment."

When these exhortations reached Kuanip's hearing, he became angry and changed Okrisen into a bird of ill omen, that is, the owl. Thereupon Oklta would not be Kuanip's wife, for which she was transformed into a winged brute of ill omen as well—the bat. But before consummating these transformations, Kuanip told the former: "You shall not chase guanaco by day, but shall hunt rats by night; and you shall not endure the light of day because your eyes will be feeble." To the second he said: "You shall be uglier than your brother; you shall be unable to see the light of day; you shall hide yourself by day, for even the shadow will be dangerous for you; you shall eat worms and not the flesh of guanaco."

The ablest arrow-makers, said the Ona, after death become female white owls who must not be killed. Naturally arrow-shape stones are their handiwork and are potent talismans.

One of the most curious Ona myths, also preserved by Cojazzi, is that the whale married the wind and begot the hummingbird. Evidently the tale alludes to the vapor from the whale's breathing, rising into the air and disappearing.

In the autumn the leaves of the *roble* (beech) turn red, but in ancient days all the trees retained their green leaves. Once it happened that a young man named Kamschoat journeyed far to the north where it was very hot; on his return he said that the great trees of that land were green in summer but red in autumn. As no one would believe this, he set out again and returned as a paroquet, laden with cardinal leaves (feathers) to display to the incredulous. On his arrival he settled in the trees, which, as he drew near, turned red. And as the paroquet is very talkative, the Ona believe that he is still making fun of them, saying when he speaks, "Would you believe that I was a liar?" In the Ona tongue this bird was called by the onomatope *kerk-perrk*.

When the *pitirrojo* (*sckiga*) and the *chinkol* (*seip*) were men

they had a quarrel which degenerated into fisticuffs and left both contenders changed into birds with the following markings: the *pitirrojo* pulled the *chinkol's* hair and there remained plumes on his head and a mark on his neck; the former received a punch on his nose, and preserves on his chest the smear of the blood that flowed out.

These tales are all set down by Cojazzi (1914), who also records the following one. We have, however, followed the more detailed version of Barclay.

Kwa-u-ishen, the Flat-crested Vulture, came from a country in the far south. It is so cold in that country that all the water is frozen, and the marrow in the bones of Kwa-u-ishen dried up, because he could find no water to drink. All the same, he was a very fierce, strong man, and he came to the land of the Ona to challenge them to wrestle. There stood up to meet him Kti'aishe, the Shag, who was a good wrestler, but a smaller man than the other. When they joined hands, the vulture got the lower grip, and putting out all his strength he pulled toward him, breaking the other's back. For that reason the shags now sit up very straight, with their backs a little hollowed in. But meantime Kti'aishe had caught him by the throat with one hand, driving the blood from it, so that it remained white, and with the other hand he tugged at the top of the head, and Kwa-u-ishen's head has been bald and wrinkled since that time. So neither of them won; but in shame because he had boasted of victory, Kwa-u-ishen changed his name, and now he is called Karkaai. He is the doctor of the south wind, and when he calls storms come, and mist and snow. Cojazzi adds that of Karkaai it is said that to kill him it is necessary to wound him in such a manner that he cannot make a sound; for if not thus incapacitated he calls the snowfalls to aid him in escaping.

Cojazzi also has recorded two transformation myths which are epilogues to the tale of killing the women given on page 93. One of the five women to escape became the kelp-goose. As she had many children, she tried to cover and defend them. Seeing that this was useless, she took flight, but with her arms ever extended in the hope that they might follow her and receive protection. And even to this day she has the same illusion and continues to stretch out her wings.

One of the men who took part in the killing of the women was

a little fellow, but he was so furious and worked so hard that the sweat ran down all over his head. Changed to a little bird, he still retains the marks of the drops of perspiration on his head.

When the Ona are unsuccessful in hunting and hear a bird sing, they immediately kill it, for they believe it mocks them with the words, "When I was a man I didn't come back to camp without meat."

A different kind of tale has been preserved by Dabbene (page 77). Once on a time the guanaco was not the wild animal he is today: he was tame and used to come peacefully to the Ona camps. One afternoon Coan-yi-pej (Kuanip) and his son passed by one of these animals who drew near on seeing them. But the boy was afraid, and hid himself against his father, who took a brand from the fire and flung it at the guanaco, who fled to the forest. There he met the fox, who said to him, "Don't you know that the men want you only because you help satisfy their hunger?" Since then the guanaco has stayed away from Ona encampments and gone to the hill-crests where he associated with H-gor-re, the yellow clay. As a result their offspring have yellowish skin. According to the Ona, on Mt. Haupin (Hewhuepen) it is forbidden to hunt guanaco because there they have their home, and if the Ona were to kill them there they would soon disappear.

Kr'en, the sun, was once a mighty hunter, and the most beautiful man in Onaland. One day after hunting, as he was coming home with a great load of guanaco meat, he noticed his wife talking to another woman at the edge of a lake. Leaving his load, he crept close to them through the rushes and listened. Here he learned that his wife Kerren, the moon, had discovered the secrets of *klókten* and was telling them to the other, so that the women might know how the men deceived them and rise in revolt. When Kr'en heard what his wife was saying, he rushed out, and in anger struck her a blow upon the face, from which come the marks that she bears there today. Then she fled from him frightened, and he followed after, pursuing her until at last they came to the edge of a high bluff which overlooks the sea. Being blinded by her fear, the moon sprang out beyond the cliff into the air, and when the sun reached the cliff he sprang out too. So they may be seen, sometimes both in the sky, and sometimes only one; but although he still pursues her, Kr'en, the sun, has never yet been able to catch his wife, Kerren, the moon.

This story Barclay tells, and also Cojazzi in a slightly different form. The latter records another sun and moon myth as follows:

In the beginning the sun and moon were human beings, husband and wife. One day, on account of a terrible quarrel the sun pinched and burned the moon's face (whence her marks), and even today they angrily follow each other across the sky. The sun does not catch her, because when he draws near the moon, she grows smaller and smaller so that she becomes invisible when the sun passes by. But when he has gone away without seeing her, she appears again, and grows larger until all her face shows. And she mocks the sun when he is safely at a distance.

The Ona believe that the moon grows large when well fed, but that when she is thin and hungry she comes to earth, and waylays and eats a child. So when the moon has waned, Ona mothers tell their children not to wander where they might be devoured. And when the moon waxes, the children run out, shouting, "The moon has eaten now, but she has not eaten me!"

According to Cojazzi the Ona believe that the planets are young unmarried men who once lived on earth. When there is a shower of falling stars it means that they run to the hunt. Barclay says that a single shooting-star means that a young man is looking for a wife.

The four winds once were men. They fought one another and the west wind put the others to flight. Hence the prevailing wind is from the west.

GHOST STORIES

The Ona have a number of ghost stories, of which only a few have been recorded. Indeed, they believed that the very mountains and trees have spirits which cry and call to one another. The following tales are all taken from Cojazzi. The longer one is recorded also by Dabbene.

About 150 years ago the Yahgan were eating whale, when the Ona saw them. Leaving behind their arms, they drew near and begged for oil. But the Yahgan, seeing them unarmed, killed two, put the rest to flight, and captured one whom they later released at the request of a young Yahgan girl. Shortly afterward an epidemic came and spread from the south coast to the Rio Grande. And it happened in this wise: One of the slain Ona was a great shaman. The Yahgan, after attempting to arrow him, had with much trouble cut off his head. Thereupon the head began to run

toward the mountains, and, before ascending them, it turned, opened its eyes in a horrible fashion, and began to laugh and make faces. All who saw this head died, including many it passed on the trail to Rio Grande on the east coast. Then it returned to the mountains. It might appear and slay again.

There is an old man in the mountains who cannot make a fire because his wood is damp. When he sees a fire he comes down to it to warm himself and knocks down the toldos weighted with snow. Barclay (1926) tells of a similar ghost named Yose. He often comes to the encampment to sit beside the fire, but he is transparent, so no one has ever seen him.

In addition it is recorded that the Ona pick up and remove from the trail a certain black beetle because they believe that it is the spirit of a certain shaman and therefore must not be stepped on.

THE HAUSH

The small mysterious tribe known in modern literature as the Haush, formerly inhabitants of the eastern tip of Tierra del Fuego (pl. IV), have faded from existence, leaving but scanty records of themselves or of their past. To the Yahgan the Haush were known as *Italum Ōna*, "the eastern Ona," while the Ona called them *Haúsh*. They themselves called their own people *Mánekenkn*.

The Haush language has been recorded in several short vocabularies, of which those of Cojazzi (1914), of Lucas Bridges which was published by Lehmann-Nitsche (1915), and of Ramón Lista (1887), are the most important. These establish that Ona and Haush are closely related to each other and to the Tehuelche.

The geographical position of the Haush in the eastern tip of Tierra del Fuego raises the suspicion that they were the first migratory wave of Foot Indians to reach the island. Additional grounds for this belief can be derived from the native place-names, for, according to Mr. Lucas Bridges, Haush place-names were found in Ona territory far to the north and west of the Haush habitat. Thus it seems clear that the Haush had been driven back by the Ona not so very long ago.

It can be definitely stated that the Haush were Foot Indians like the Ona and that they did not use canoes, yet they seem to have derived their livelihood from the sea-beaches more than did the Ona. At times the Haush and Ona camped together, but

HAUSH ENCAMPMENT. (After Hawkesworth)

they rarely camped with the Yahgan except when a dead whale drifted ashore in a locality accessible to both. Physically the Haush are said by the Bridges to have resembled the Yahgan as much as the Ona.

On the cultural side, elements of both Ona and Yahgan practice were utilized by the Haush, but the greater relationship seems toward the Ona. Thus the Haush speared their seal (of which they ate many) with spears in Yahgan fashion, but they hunted guanaco with bow and arrow like the Ona. Also they usually dressed like the Ona in guanaco (not seal or otter) skins and used a guanaco-hide forehead cap like the Ona. Furthermore, they generally lived in a windbreak of Ona type rather than in a Yahgan hut. So Mr. William Bridges remembers them. However, I suspect that there may have been cultural changes in the last two centuries, because earlier accounts picture them with more Yahgan cultural features, such as houses of Yahgan type. In pl. VI we reproduce the Haush encampment sketched by Banks' artist during Cook's visit in 1769. Here the house is obviously of Yahgan type; also the harpoon, the shell necklace, and the short cape worn by the man behind the fire are Yahgan features. The basket, of the coiled technique, is Yahgan in style, and from the Haush name (*tawal*) given by Lista [1] we judge that it was woven in the manner called *tawĕ'la* by the Yahgan, illustrated in figs. 59 and 61. Ona cultural features in this picture are the long fur robes and the cincture worn by a woman in the foreground.

Cojazzi (1914) has placed on record several interesting observations in regard to the Haush. He says that the method of burial was different from that employed by the Ona, because the Haush dug very much deeper graves. In these, wrapped in skins, corpses of ordinary individuals were placed face upward, but shamans were buried face downward in order that their spirits might talk with the spirits of the earth. This distinction in grave types may prove important in archeological studies in eastern Tierra del Fuego.

The Haush had an initiation ceremony like the Ona *klókten*. Of the masked spirits who appeared during it, one was Ksorten, a male earth spirit who was supposed to issue from the fire in the ceremonial lodge. Evidently he corresponds to the spirit called

[1] Vocabularios de la Lengua de los Onas del Sud, 1887, pp. 151, 152. This vocabulary is cited as Ona (Shilknam) by Lehmann-Nitsche (1915), but comparison with the Lucas Bridges vocabulary shows clearly that it is Haush.

Sh'ord among the Ona. To the Haush he came naked and painted. His skin was as hard as hide or stone. Although he never spoke, he was supposed to understand the words of men; yet he was capable of crudely expressing himself, for, *mirabile dictu*, he was known to have cried out when bitten by a dog. Ksorten had the peculiar attribute of being unable to cross even the smallest stream, but had to be carried over it. It was considered useless to kill him, because a host of similar beings would issue from his head. During the course of the initiation ceremony, he made the rounds of the encampment, where, if he saw a woman, he seized a basket and threw it at her.

Another masked spirit was Kela, who corresponded to the Ona H'alpin. She was a naked female, with a very tall pointed head, who was supposed to live in the sky, whence she could be summoned by a shaman. She issued from the initiation lodge with closed fists beside her thighs, stamping her feet and shouting "*Ka-la-la-la-la!*" The witch-doctors surrounded her and the other men crowded closely, but women and children stood at a distance.

Haush mythology, says Cojazzi, was much like the Onan. For instance, they had their own version of the Kuanip myth cycle. He went to the sky, they said, from a spot called Koschen near Good Success bay, where his footprint still may be seen. His sons are now twin stars.

The Haush had a myth cycle concerning the fox, who appeared usually in the guise of a trickster. Once, it was said, all the animals were tame, and, living near the abodes of men, they sang in unison "*Ekelé, ekelé, ekelé!*" This happy state of affairs came suddenly to an end, for somebody put something evil-smelling under the nose of the fox and he at once became wild. Furthermore, he invited the other animals to join him in his wildness, which they all did. In the Ona myth of how the guanaco became wild, it will be recalled that the fox played a part.

The moon was greatly feared by the Haush. When it was ruddy they said it was caused by the blood of those it had consumed.

Owing to the scarcity of data concerning the Haush, we quote at length a description of the natives of that tribe encountered at Good Success bay by Cook in 1769, as compiled by Hawkesworth:

> The inhabitants of this town were a small tribe, not more than fifty in number, of both sexes and of every age. Their colour resembles that of the rust of iron mixed with oil, and they have long black hair: the men

are large but clumsily built; their stature is from five feet eight to five feet ten; the women are much less, few of them being over five feet high. Their whole apparel consists of the skin of a guanicoe, or seal, which is thrown over their shoulders, exactly in the state in which it came from the animal's back; a piece of the same skin, which is drawn over their feet, and gathered about the ancles like a purse, and a small flap, which is worn by the women as a succedaneum for a figleaf. The men wear their cloak open, the women tie it about their waist with a thong. But although they are content to be naked, they are very ambitious to be fine. Their faces are painted in various forms: the region of the eye was in general white, and the rest of the face adorned with horizontal streaks of red and black; yet scarcely any two were exactly alike. This decoration seems to be more profuse upon particular occasions, for the two Gentlemen who introduced Mr. Banks and the Doctor into the town, were almost covered with streaks of black in all directions, so as to make a very striking appearance. Both men and women wore bracelets of such beads as they could make of small shells or bones; the women both upon their wrists and ancles, the men upon their wrists only; but to compensate for the want of bracelets upon their legs, they wore a kind of fillet of brown worsted round their heads.[1] They seemed to set a particular value upon any thing that was red, and preferred beads [2] even to a knife or a hatchet. . . .

We saw no appearance of their having any food but shell-fish; for though there were seals frequently seen near the shore, they seemed to have no implements for taking them. The shell-fish is collected by the women, whose business it seems to be to attend at low water, with a basket in one hand, a stick, pointed and barbed, in the other, and a satchel at their backs; they loosen the limpets and other fish that adhere to the rocks, with the stick, and put them in the basket; which, when full, they empty into the satchel.

The only thing we found among them in which there was the least appearance of neatness or ingenuity, was their weapons, which consisted of a bow and arrows. The bow was not inelegantly made, and the arrows were the neatest we had ever seen: they were of wood, polished to the highest degree; and the point, which was of glass or flint, and barbed, was formed and fitted with wonderful dexterity. . . .

They appeared rather to be a travelling hord than to have any fixed habitation. Their houses are built to stand but for a short time; they

[1] In this custom we see a Tehuelche trait not found among the Ona.—S.K.L.

[2] The word for beads was learned to be *halleca*, which might be a compound built on the Haush *icha* or Ona *échi*, throat. The word for water is given as *ooda*, clearly resembling the Haush *ootun*, but not the Ona *choon*. The words *icha* and *ootun* are from a vocabulary collected by Lucas Bridges and published by Lehmann-Nitsche (1915).—S.K.L.

have no utensile or furniture but the basket and satchel, which have been mentioned before, and which have handles adapted to the carrying them about, in the hand and upon the back; the only clothing they had here was scarcely sufficient to prevent their perishing with cold in the summer of this country, much less in the extreme severity of winter; the shell-fish which seems to be their only food must soon be exhausted at any one place; and we had seen houses upon what appeared to be a deserted station in St. Vincent's Bay.

It is also probable that the place where we found them was only a temporary residence, from their having here nothing like a boat or canoe, of which it can scarcely be supposed that they are wholly destitute. . . .

They did not appear to have among them any government or subordination: none was more respected than another; yet they seemed to live together in the utmost harmony and good fellowship. Neither did we discover any appearance of religion among them, except the noises which have been mentioned, and which we supposed to be a superstitious ceremony, merely because we could refer them to nothing else. . . . Upon the whole, these people seemed to be the most destitute and forlorn, as well as the most stupid of all human beings; the outcasts of Nature, who spent their lives in wandering about the dreary wastes, where two of our people perished with cold in the midst of summer; with no dwelling but a wretched hovel of sticks and grass, which would not only admit the wind, but the snow and the rain; almost naked; and destitute of every convenience that is furnished by the rudest art, having no implement even to dress their food: yet they were content. They seemed to have no wish for any thing more than they possessed, nor did any thing that we offered them appear acceptable but beads, as an ornamental superfluity of life. What bodily pain they might suffer from the severities of their winter we could not know; but it is certain, that they suffered nothing from the want of the innumerable articles which we consider, not as the luxuries and conveniences only, but the necessaries of life. . . .

ARCHEOLOGY OF EASTERN TIERRA DEL FUEGO

Camp-sites

Three archeological camp-sites were inspected by the writer in eastern Tierra del Fuego, all of them on the Bridges' property south of the Rio Fuego. One of them extends beneath the shearing shed of the Estancia Viamonte and across the corrals to the southeast. A second covers the crest of low hills to the west and south. The third is situated on a hill five or six miles to the south, at the point (called Kaitrrh in the Ona tongue) where the Harberton

trail leaves the coast. As each of these sites is of a slightly different character we shall describe them briefly.

The shearing shed and corral site covers a small hummock some two hundred yards from the beach. Glacial shingle, polished by wind-driven sand, covers the ground. Scattered among the rounded pebbles, numerous worked stones, chips, knives, scrapers, etc., can be picked up. I collected a bucketful in the course of a couple of hours. There are no other signs of human habitation; no rubbish of any kind is visible. A workshop site.

Between a quarter and half a mile to the south and west of the corrals rise low hills covered with stunted trees and grass. Wandering along the seaward slope just below the crest, the presence of shells may be detected. Usually they are concealed by the grass, but in places in the deep shade or where the ground has recently been disturbed they show clearly. There was no great concentration of rubbish at any special locality apparently; no specimens could be discovered on the surface on account of the grass. The whole site covers perhaps half or three-quarters of a mile in length by fifty to a hundred yards in width.

The southern end of this site extends beyond the trees to the beach. Owing to the shifting of the sand, especially where the coast road crosses it, objects may easily be buried and disinterred. Here it is possible to pick up chipped implements in some numbers.

Five or six miles southward is a hill partly cut away by the sea. In the Ona tongue it is called Kaitrrh. Surface finds were made here, but no trace of shells or of animal refuse could be seen. As the ground consists only of sand for some distance in every direction, all pieces of stone must have been transported thither. Three specimens from this station are pictured in pl. VIII, *b*, *c*, *e*.

From the sites here listed the writer could obtain no data on their antiquity. They cover an area larger than the Yahgan camping-places, and the refuse is not of great depth. For reasons given below, we believe that the Ona arrived some time after the Yahgan, hence we might expect their camps not to exhibit so much refuse.

East-coast Archeological Finds

The extreme simplicity of Fuegian culture is well exemplified by the archeological remains, which, if not scarce, represent only a few implements most crudely made. In general the east-coast finds are large chips of stone, of requisite shape for their purpose,

worked on one face only, and usually reworked along the cutting edge. The material is green chert, white quartz, and black basalt. Obsidian implements are found in Patagonia, but not in Tierra del Fuego.

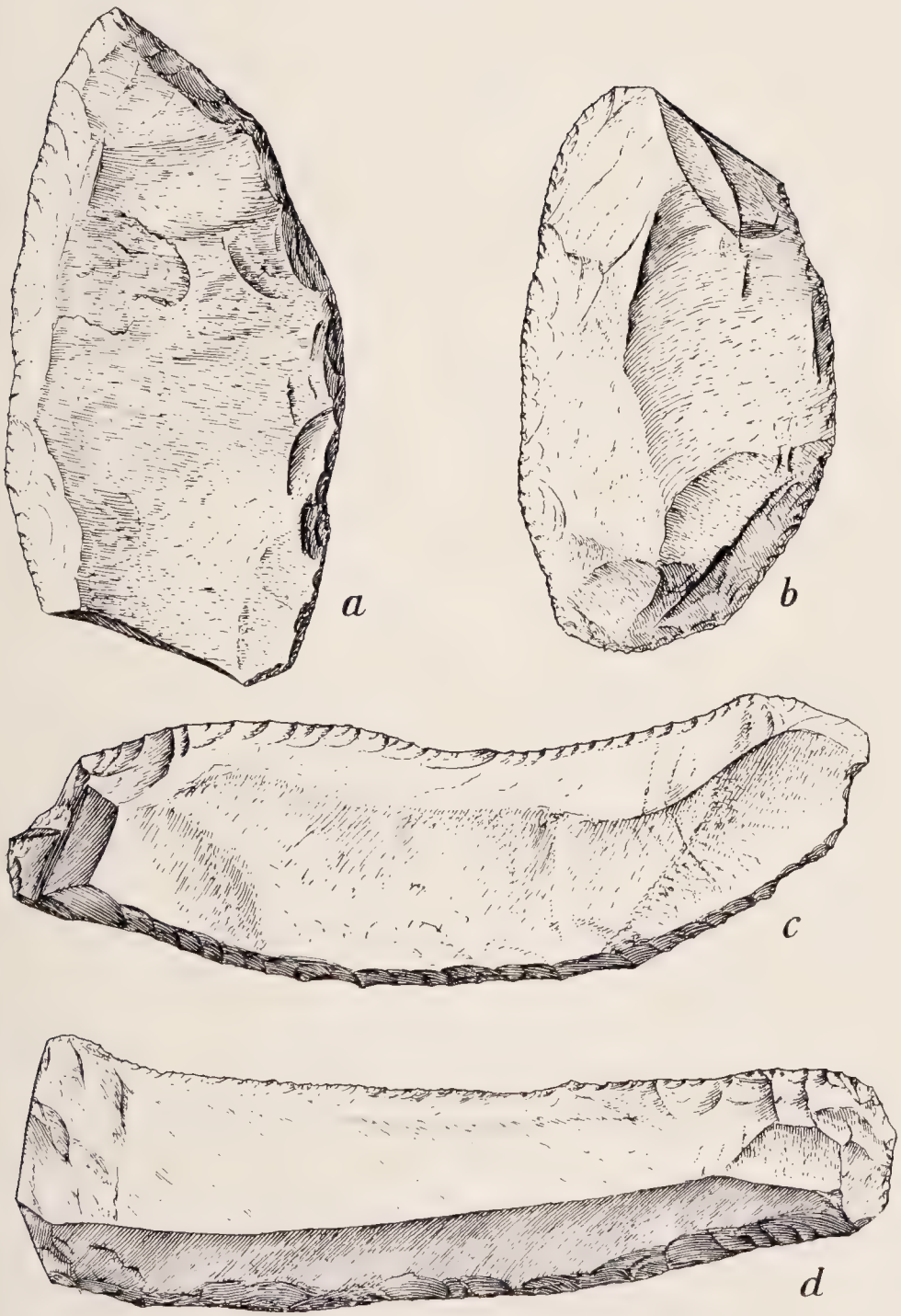
1. KNIFE-BLADES.—The commonest form of knife-blade is a leaf-shape, plano-convex flake, three or four inches in length, with secondary chipping along the edges. Knives of this shape, though usually of greater size, can be found along the south coast of Tierra del Fuego; they are also common in Patagonia; examples from the latter region have been published by Outes (1905, figs. 72–79). In our pl. VII, *a*, *b*, two Fuegian examples are illustrated; both are slightly asymmetrical, as is often the case with Patagonian knife-blades.

A second kind of knife-blade from the east coast of Tierra del Fuego is illustrated in pl. VII, *c*, *d*. These thin linear chips, about five inches long, with parallel edges sharpened by secondary chipping, are not common. Several blades of this form were noted by the writer in the collection of Mr. John Hamilton at Galliegos in southern Patagonia; Outes (1905, figs. 66–68) pictures three specimens found farther to the north in Patagonia, while Holmes (1912) has illustrated examples from the province of Buenos Aires.

Both forms of knife-blade here described were adapted to hafting on a wooden handle. In recent years the Ona hafted steel blades by inserting them in the split end of a wooden handle or by simply lashing them to the side of the handle (fig. 23). The first method would seem more useful for thin metal blades than for thicker ones of stone.

2. SCRAPERS.—The commonest form of scraper found at archeological sites on the east coast of Tierra del Fuego is an oblong, plano-convex chip with working edge retouched (pl. VIII, *b*, *c*, *e*). The type has been called the "duck-bill scraper." Sometimes the chip shows a portion of the surface of the nucleus from which it was struck, as in pl. VIII, *b*. Occasionally at one end of the blade there is a small incurved section, forming a "spoke-shave" scraper, a type useful for cleaning bones. This feature is illustrated in pl. VIII, *e*. It is found also in Beagle Channel scrapers, as seen in fig. 104, *c*.

Scrapers of the "duck-bill" class, designed for scraping hides, presumably were hafted in the fashion of the woman's modern



STONE BLADES FOUND IN CORRAL, ESTANCIA VIAMONTE, TIERRA DEL FUEGO

LENGTH OF *d*, 5 IN. (14/3972)

glass-bladed scraper of the Ona. This has been described in detail above and is illustrated in figs. 24 and 25, *b*. In Patagonia, where scrapers of this shape are common, blades were hafted at right-angles to the handle by inserting them in a slot and securing them with resin. This form of hafting is described by Outes (1905, fig. 53), who states that it is of Araucanian origin. A commoner form of Patagonian hafting has been illustrated by Holmes (1912, fig. 30): a flexible sapling has been bent until the ends met, and the blade, bedded in moss, is secured between the ends by hide lashings.

A second east-coast Fuegian scraper is flat on one side, pronouncedly convex on the other, oval in shape, and with a cutting edge completely encircling it (pl. VIII, *a*, *d*). This scraper is not suitable for hafting, and presumably was held in the hand. Many others are so convex (pl. VIII, *a*) that they may be described as snub-nosed, and these doubtless were pushed away from the body when scraping, as was done by Ona women using their modern tool. Scrapers of this oval class are sometimes found on Beagle channel (fig. 104, *a*); the writer has seen several examples in the Hamilton collection at Galliegos.

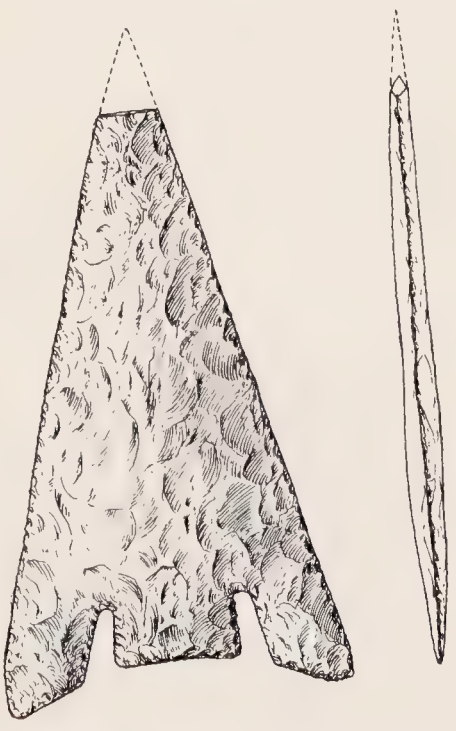


FIG. 40.—Stone blade from Estancia Viamonte, Tierra del Fuego. Width, $1\frac{3}{4}$ in. (Courtesy of Mr. Percy Reynolds, Jr.)

3. CLEAVER.—In the collection obtained on the east coast are several heavy oval implements, about twice the size of the oval scrapers. These show signs of battering along the edge, and apparently they had been used as cleavers or hand-axes. During my visit the Ona had no tool of this type, but it must be remembered that these remains may have been left by the Haush before they retreated to the eastern tip of Tierra del Fuego and that we have no knowledge of the kinds of tools used by that tribe. The fact that a form of implement not of recent Ona type comes from sites

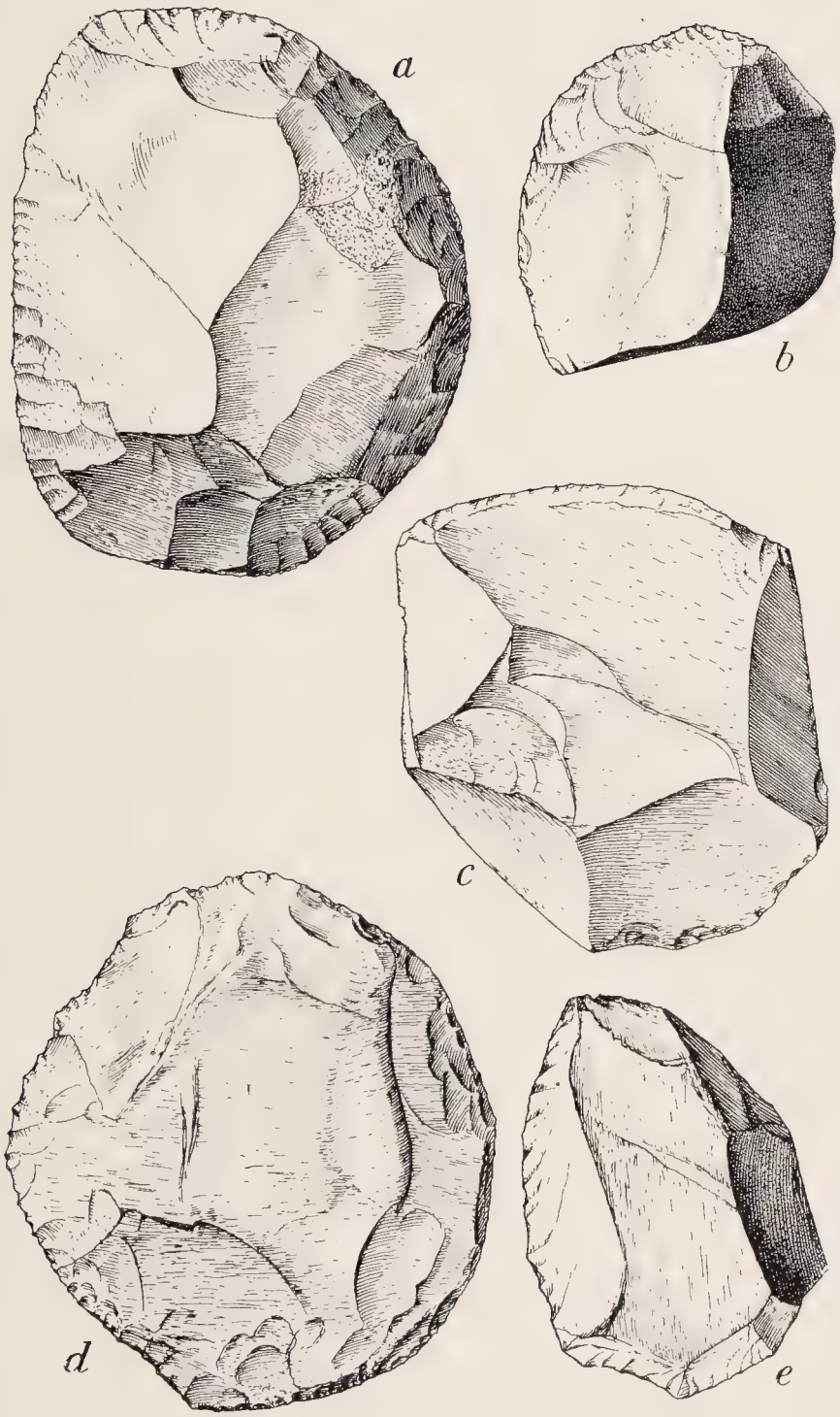
near the Rio Fuego might well be a basis for belief that the other remains are not all Ona handiwork.

4. Arrow- or Spear-points.—Occasionally a delicate, symmetrical, and carefully chipped point like that shown in fig. 40 turns up on the east side of Tierra del Fuego. The specimen here illustrated has been worked down on both sides and carefully retouched along the edge. In any part of the world it would be considered a fine example of stoneworking, and it shows that at least an occasional Fuegian artisan could produce first-class implements.

The reader will notice that to form the tang two slots have been sunk in the base of the blade. This is in conformity with recent Ona practice, although the barbs on modern Ona points are set at a different angle because the slots are sunk diagonally from the tip of the blade, as shown in fig. 32, *b*. This is unlike the common Patagonia type (fig. 32, *c*), from which a bifurcated tang projects behind the barbs. The Fuegian type of arrow- and spear-head was not present in the large collection of Mr. Hamilton, inspected at Galliegos; it is, however, reflected in Patagonian remains, and has been illustrated by Outes (1905, fig. 104); Medina (1882, figs. 52, 54) has published similar points from Chile; Yahgan examples are shown in fig. 105, *c*, *d*.

Fig. 41.—Bola from Estancia Viamonte, Tierra del Fuego. Diameter, $2\frac{1}{2}$ in. (14/3970)

Bolas.—Tierra del Fuego has produced few polished stone implements. In fig. 41 we illustrate a bola found near the shearing shed on the Estancia Viamonte and kindly presented to the Museum by Mr. William Bridges. Other specimens labeled Dawson island and Rio Grande are in the museum at Punta Arenas. Outes (1905, p. 427), in his scholarly study of Patagonian archeology, has shown that in the early part of the sixteenth century the bola was used only by tribes living on the shores of the Rio de La Plata—the Beguá, Charrúa, and Querandí. Con-



SCRAPERS

a, *d*, ESTANCIA VIAMONTE CORRAL (14/3972); *b*, *c*, *e*, KAITRRH, TIERRA DEL FUEGO (14/3971). LENGTH OF *d*, 3 IN.

tact with the Spaniards caused the extermination of these unfortunate natives, but ere that had come to pass the use of the bola had been taken up by the Puelche, among whom it was noted in 1599. From them it spread to the Tehuelche of Patagonia.[1] All the early voyagers along the Patagonian coast describe native bows and arrows, but the bola is not noted before the voyages of Duclos-Guyot and De la Giraudais (Bahía Posesión in 1766) and of Bougainville (Bahía Boucault in 1777). Thereafter the bola was a commonly described object. In Tierra del Fuego the bola never came into general use. It was known, however, to the northern Ona at the time of the *Beagle* expeditions (1829–32).[2] Clearly then the bola was no ancestral arm carried to Tierra del Fuego in remote centuries, but a recent introduction not long antedating the European colonization.

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[1] Fig. 16, an engraving based on a drawing by Oviedo made during the second quarter of the sixteenth century, shows two large round objects evidently intended to represent bolas. It thus might disrupt the line of reason advanced above. In counter argument it may be said firstly that Oviedo never visited this part of the world and in making his drawing may have combined data on the inhabitants of the shores of the Rio La Plata and the Straits of Magellan—information he doubtless obtained from the same individual. Secondly, in several instances two or more of Oviedo's drawings have been combined by his publishers. Unfortunately the material on which our fig. 16 is based has been cut out of the original manuscript.

[2] Fitzroy (1839, p. 186, note) states that "Mr. Low has seen Fuegians with balls (bolas) in the northern part of their country."

Part II

CANOE INDIANS

THE YAHGAN

THE Yahgan Indians, the southernmost people in the world, lived on the southern shores of Tierra del Fuego from Brecknock peninsula to Spaniard harbor, and on the adjacent islands southward to Cape Horn itself (pl. IV). In spite of the tempestuous waters they confronted, they were a seafaring people and derived their livelihood almost entirely from the sea and its beaches.

Like the Ona, the Yahgan had to move freely and frequently in search of sustenance, but their camping-places were limited by the fact that each family was dependent on a fragile bark canoe, for which shelter must be provided. Thus favorable stretches of beach today are marked by great refuse-heaps, of most extraordinary size when one recalls that they represent only temporary stopping-places and that no family ever camped on a spot where it was known that a death had occurred. Centuries or even milleniums must have witnessed the building up of these vast agglomerations of bone and shell.

The Yahgan came under missionary influence in the middle of the nineteenth century, and a permanent mission station was maintained among them from 1870 until recently. Hence their culture was much modified before they could be studied by trained ethnologists. For instance, by the eighties they had modified their initiation rites. We must add that among the Ona those without missionary training tended to survive the longest, but among the Yahgan the last survivors have almost invariably been mission reared.

Writing nearly a century ago, Fitzroy (pp. 137–139, 186) thus describes the untrammeled Yahgan of his day:

> The Tekeenica, natives of the south-eastern portion of Tierra del Fuego, are low of stature, ill-looking, and badly proportioned. Their color is that of very old mahogany, or rather between dark copper and

bronze. The trunk of the body is large in proportion to their cramped and rather crooked limbs. Their rough, coarse, and extremely dirty black hair half hides yet heightens a villainous expression of the worst description of savage features. . . .

FIG. 42.—Yahgan Indian. (After Hawkesworth.)

Sometimes these satires upon mankind wear a part of the skin of a guanaco or a seal skin upon their backs [fig. 42], and perhaps the skin of a penguin or a bit of bird hide hangs in front; but often there is nothing, either to hide their nakedness or to preserve warmth, except a scrap of hide, which is tied to the side or back of the body, by a string around the waist. Even this is only for a pocket, in which they may carry stones for their slings, and hide what they pick up or pilfer. A man always carries his sling around his neck or waist, wherever he goes.

Women wear rather more clothing, that is, they have nearly the whole skin of a guanaco, or seal, wrapped about them, and usually a diminutive apron. The upper part of the wrapper, above a string which is tied around the waist, serves to carry an infant. Neither men nor women have any substitute for shoes.

Both sexes oil themselves, or rub their bodies with grease; and daub their faces and bodies with red, black, or white. A fillet is often worn around the head, which upon ordinary occasions is simply a string, made of sinews; but if going to war or dressed for show, the fillet is ornamented with white down, white feathers, or pieces of cloth, if they have obtained any from shipping. . . .

It is rather curious that each of these natives is trained to a particular pursuit: thus, one becomes an adept with the spear; another with the sling; another with a bow and arrows; but this excellence in one line does not hinder their attaining a considerable proficiency in all the others.

Before entering on the details of Yahgan life we shall dwell briefly on the charges of savagery and cannibalism made by numerous writers. As early as 1600 the Alacaluf were thought to be cannibals, for in that year Van Noort marooned on Santa Maria island one of his officers charged with insubordination, in the belief that he would die of hunger or be eaten by the savages. A quarter of a century later Jaques L'Hermite charged the Yahgan with cannibalism. In more recent years Darwin and Fitzroy have repeated the accusation on hearsay evidence, and their dictum has been widely published. However, no white man has ever witnessed the act of anthropophagy among any of the Fuegian tribes, while in recent years those who have lived with the natives and come to know them well all agree that the idea of eating human flesh is as repugnant to a Fuegian as to a European. According to Martial (p. 193) the Yahgan ordinarily do not eat dog, fox, or rat, because these animals will eat human flesh.

The imputation of barbarity, on the other hand, rests on firmer ground, for there are well-authenticated instances of attack by the Yahgan on European crews. The earliest of these resulted in the death at Nassau bay in 1624 of seventeen men from L'Hermite's ships; the most widely published was the massacre at Woolyia in 1859 of the crew of the missionary schooner *Allen Gardiner*. What provoked these attacks is a secret intombed with their victims. Early voyagers habitually kidnapped natives to serve as pilots and thus aroused merited resentment. Native women often have

been a source of contention. Intelligent and amicably intended travelers through ignorance of native customs may easily wound native feelings to the point of rousing open hostility. Of the looting of ships and robbing of their crews, it is but just to remark that the Yahgan, although recognizing personal property, habitually shared their provisions with one another. Also, among primitive people in general the robbing or tricking of strangers often is considered entirely ethical or even especially deserving of praise, though the same performance at the expense of a relative or a friend might be condemned. The Yahgan have suffered in public esteem because their morality has been judged on the basis of Christian ethics.

Language

The Yahgan tongue, although it has been studied since the visit of Darwin, as yet is thought to be related to no other New World language. Through missionary labors, chiefly those of the Rev. Thomas Bridges, three large vocabularies have been compiled. Of these one containing about 4000 words on 137 pages in Mr. Bridges' handwriting is still in possession of the Bridges family in Tierra del Fuego. It covers only eleven initial letters. Inside the front cover is written: "Begun this June 19th, 1879." A second vocabulary compiled by Mr. Bridges, aided by several lay members of the English mission, contains about 12,000 words. It is now in possession of the Rev. John Williams in Punta Arenas. Finally, there exists in Belgium a Yahgan vocabulary in two volumes of about 32,430 words written on 1081 pages. It is the result of Mr. Bridges' life-long contact with the Yahgan extending from 1856 until his death in 1898. During his later years, according to his sons, he was continually working over this manuscript. After his death it was lent to Dr. Frederick A. Cook, who had been to Tierra del Fuego with the Belgian Antarctic expedition in 1897 and 1899. Cook removed the manuscript to Belgium, where it has since remained. Plans for its publication were interrupted by the World War.

For printed source-material in Yahgan, students are further indebted to Mr. Bridges for translations of the gospels of St. Luke and St. John, and the Acts of the Apostles. All these, as well as his manuscript dictionaries, are written in the Ellis alphabet. The Rev. John Williams of Punta Arenas has translated the collects and morning and evening prayers into Yahgan, and also has

published a broadsheet with the Lord's prayer. Both are written in the ordinary alphabet with a ˘ to denote the short vowels and soft *g*.

As for the nature of the Yahgan tongue, in direct contrast to Ona, it is soft and pleasant to the ear. There is a great abundance of vowel sounds, and the pronunciation of consonants presents no difficulties. The line between *p* and *b* is loosely drawn. There is a soft and a hard *g*, and also a soft *ch* sound (*q*).

According to Mr. Fred. Lawrence, of Remolino, generally regarded as the best living authority on the Yahgan language, in the old days there were five distinct dialects, distributed as follows:

1. Central dialect, including Ushuaia and Murray narrows. This is the speech recorded in the Bridges dictionaries.
2. Eastern dialect, spoken from Harberton eastward and on Lennox island, New island, etc.
3. Western dialect, found from Cape Divide westward.
4. Wollaston Islands dialect.
5. New Year's Sound dialect, spoken to the south and west of False Cape Horn and on the southern part of Hoste island.

These dialects are said to have differed from one another as much as Scotch from Cockney; that is to say, they were mutually intelligible but there was wide variation in accent and the choice of words. Thus the double-barbed harpoon is *waíki* in the west and *wek* in the east; the fish-spear is *ushάwaia* in the east and *shushróya* in the central dialect; bark of the *Nothofagus betuloides* is *aiírshu* in the east and *aíirshun* at Ushuaia; a sling is *mataᵘwá* in the east and *watewá* in the central dialect, etc. Today it is difficult to know just what dialect one is hearing, because the few surviving Yahgan live together much of the time and have fused their speech. However, the fact that considerable divergence once existed within such a small geographical limit indicates that but little movement of the tribe as a whole had taken place for centuries, at least.

The Yahgan words in the present text were obtained chiefly from Mr. William Bridges and Mr. Fred. Lawrence, who speak the central dialect; from William, born at Halupaí (see fig. 98); from Walter, a Lennox islander; from Charley, son of a Haush called Iniolh and a Yahgan woman; from Mary, a westerner. The four Indians mentioned were all mission-reared and therefore today

speak the central dialect. The entire vocabulary was checked by Mr. William Bridges and any words not in the central dialect were noted.

The richness of the language is indicated by the more than 32,000 words brought together by Rev. Thomas Bridges. Many of these words, of course, are compounds, but such a vast number are fundamentally due to unusual specialization in meaning.

On the other hand, Yahgan exhibits the lack, usual among primitive people, of abstract ideas and generalizations. In fact, even in English (which, due to missionary training, some of the Indians spoke fairly well) the Yahgan exhibited inability to grasp the concept of generalities.

The manner of counting was even more primitive than the Ona count, for the Yahgan had no words for 4 and 6, which, to be sure, were compound numbers in the primitive Ona system. The Yahgan count is:

1.	*hikóli*	one
2.	*kambaíbi*	two
3.	*matén*	three
5.	*hikóli iírsh* [1]	one hand
10.	*kambaí iírsh*	two hands

Clothing

From Fitzroy's description of the Yahgan, cited above, it appears that there was very little order or regularity in their scanty dress. However, though seemingly inadequate, their clothes were of well-defined forms which we shall describe. It is no exaggeration or overstatement to remark that, considering the climate in which they had to live, this southernmost tribe had less body-covering than any other people in the world. As compared to the Ona, their garments, similar in nature, were deficient in size, while the stiff and unyielding skins they employed from their very nature lacked the warmth supplied by the pliable, voluminous, and snug-fitting robes of the Foot Indians. We must add that individuals of both sexes and all ages often went entirely naked.

1. Cape.—The usual cape worn in summer and winter alike by both men and women was a seal or sea-otter skin. Sometimes two

[1] Bove gives the word *cupascpa* for 5. It was not known to any Yahgan Indian or member of the Bridges or Lawrence families encountered by the writer.

FIG. 43.—Yahgan guanaco cape. Size, 35 by 50 in. (14/2251)

or more were sewn together. In general, however, this garment extended only to the waist and did not completely encircle the body. It was tied across the chest with thongs. When out-of-doors it was worn over the windward shoulder. And these people dwelt in a latitude corresponding to that of the Aleutian islands and Labrador!

The eastern Yahgan at times wore capes of guanaco-skin which were better suited to the cold. One of these (fig. 43) we illustrate; it does not attain the size of the Ona robe shown in fig. 6. The western Yahgan and the Alacaluf used skins of the coypu, a small land-otter known to the Yahgan as *saiapaí*.

FIG. 44.—Yahgan pubic covering. Width, 9 in. (14/2356)

2. PUBIC COVERING.—A triangular pubic covering of skin (*múshwalána*) was usually worn by the women (fig. 44).

3. MOCCASINS.—The Yahgan often went barefoot, but at times they wore moccasins of seal-skin (*kíli*), which resemble the guanaco-skin footwear of the Ona, but are not made in quite the same way (fig. 45). To begin with, a piece of skin shaped like a truncated triangle is cut out and trimmed to the proper size. This lacks the attached heel-strap of the Ona moccasin (fig. 8, *a*). Holes are made across the large end (fig. 46, *a*), which is fitted snugly around the heel. A short strap is then looped through the upper pair of holes (fig. 46, *b*) and the heel sewn together. Holes are pierced on the long sides; these are doubled over and laced in the Ona fashion with a strap across the toes and across the instep. These moccasins are worn with the hair-side outward and are stuffed with grass. The writer found them when wet even more foul than the guanaco moccasins, and neither so warm nor so comfortable for walking.

FIG. 45.—Yahgan moccasin. Length, 11 in. (14/2346)

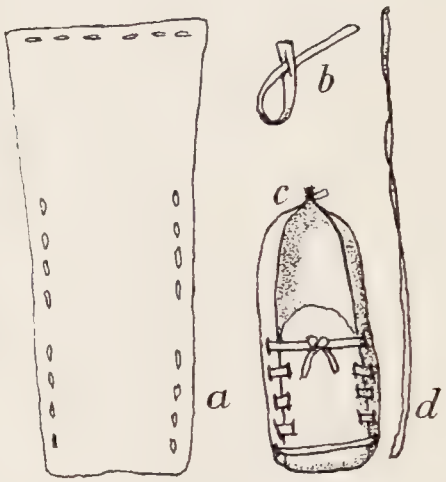


FIG. 46.—Pattern of Yahgan moccasin.

FIG. 47.—Yahgan legging. Height, 13 in. (14/2266)

3. LEGGINGS.—The eastern Yahgan, who were much more concerned with the guanaco than other members of their tribe, sometimes wore guanaco-skin leggings (*páwa*), such as fig. 47, for winter hunting. This garment was also sometimes used by the Ona, from whom the Yahgan probably borrowed it.

ORNAMENTATION

The Yahgan used no set form of hair-dressing, but allowed their locks to fall in a confused mass, except over the forehead where the hair was cut to form a bang. Facial and body hair they pulled out with a pair of mussel-shells.

The chief form of decoration seems to have been facial and body painting, which was freely employed in the old days. The materials used are mentioned below. While paint was often applied with the finger, an elaboration over the Ona practice is seen in the use of a small spatula (*telákikamána*). One of these is illustrated in fig. 69, *d*. The Yahgan did not tattoo.

Feather diadems and goose-down forehead caps were worn at times, but their purpose was more ceremonial than utilitarian or decorative, and will be discussed below.

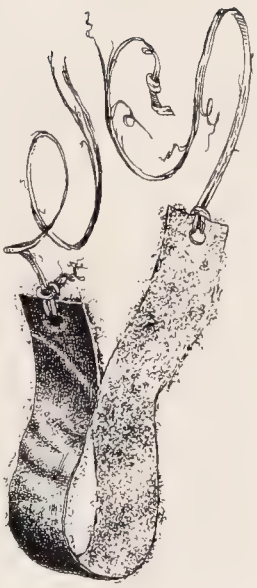


FIG. 48.—Yahgan guanaco-hide wristlet. (14/2358)

Wristlets and anklets were worn, but not so generally as among the Ona. The common type (*maíamasár*) is not braided of grass or sinew in Ona fashion, but consists of a narrow band of guanaco-hide painted white (fig. 48). This was attached in place with small sinew laces.

FIG. 49.—Yahgan shell necklace. Total circumference, 96 in. (14/2341)

Of necklaces the Yahgan made two kinds. The simpler type is constructed with cylindrical sections cut from the leg-bones of gulls or of ducks and strung on braided sinew. A more elaborate and attractive necklace (*opúrrshka*) they made from small shells (Latin, *Photinula violacea;* Yahgan, *haúsh undálu*) found in the kelp (*haúsh*) which fringes the coast (fig. 49). When polished by use, beautiful opalescent tints appear in these shells. The Yahgan strung them by punching

a small hole near the lip of the shell. Through these holes a braided sinew cord was run, doubled back on itself, and lashed with spiral wrappings of sinew. This method of stringing is illustrated in fig. 50. The shells thus united are always graded according to size, sometimes with the biggest shell at one end and the smallest at the other, sometimes with the big shells in the middle and the small ones at either end.

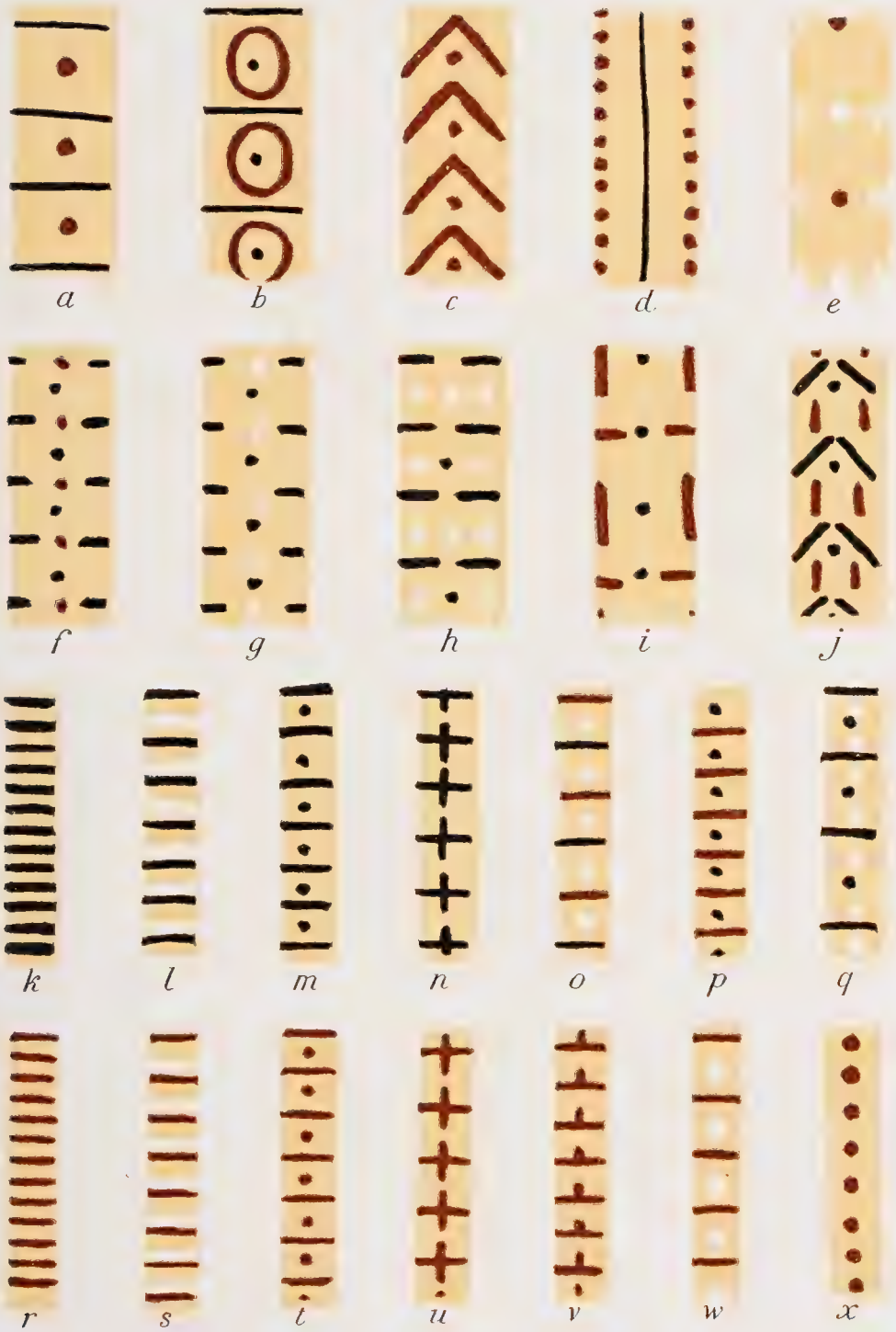
FIG. 50.—Detail of Yahgan shell necklace. Length of shells, one-half in. (14/2339)

USE OF PAINT

Like the Ona, the Yahgan made regular use of a red paint (*ímí*) obtained by burning earth, a black paint (*yapúshak*) made of charcoal, and a white paint (*tum^{e}rápo*) of clay. According to Fitzroy (p. 177) and Dabbene (1907, p. 58) these colors have symbolic significance. Thus, white was the sign of war or ceremonial display, black was the mark of grief and mourning, while red denoted peace and happiness. With their paints the Indians adorned their persons, their dance masks, their ceremonial lodges, and some of their tools and utensils. The latter were often embellished with solid color, but body, dance masks, and ceremonial lodges were made the field for painted designs.

In pl. IX is shown a selection of patterns taken from the frame of a ceremonial lodge. No simpler motives of artistic significance can be achieved, for these designs are mere smudges of color applied with thumb or finger. The elements are a dot, a short line, and, in one instance, a circle. Two lines are combined to form a cross, a T, and a chevron. Design units repeat themselves in simple rhythm.

Dance masks are illustrated in figs. 92 and 93. Their designs, though of symbolic significance, are again abysmally primitive. Facial painting may be studied in the photographs published by Koppers (1924); they are similar to the patterns here described.



YAHGAN PAINTED DECORATION

The Encampment

Yahgan clothes were less suited to the climate than those of the Ona, because they were smaller and gave less bodily protection, and because the skins they used were less suitable for their purpose. Thus, guanaco-skin, regularly employed for Ona robes, is thin and flexible, so that it will readily conform with the contours of the body, while the hair is heavy, so that it will shed water and preserve warmth. In contrast, seal-skin and sea-otter skin of Yahgan capes has a heavy and stiff hide and short hair, and therefore

Fig. 51.—Yahgan house. (After Hyades and Deniker.)

gives less protection. As a result of this disparity, to maintain life the Yahgan had to have more shelter than that afforded by an Ona windbreak. And possessing the means of water transportation they could handle heavier equipment than their inland neighbors, though, to be sure, their bark canoes were small and frail to bear much cargo in addition to the human freight.

Normally the Yahgan lived in a wigwam known as *ákharh*. In the west, like the Alacaluf hut, this was usually a domed affair about the size and shape of a large haycock, framed with saplings set upright in a circle or oval and then bent inward until they met

(fig. 51). Farther east the wigwam more frequently was pointed, for it was constructed of poles too thick to be bent. The introduction of the ax has increased the use of the pointed house form. Both kinds of houses were covered in summer with leaves, bark, kelp, grass, or whatever was handy. But during the winter months it was necessary further to break the force of the wind, and so the wigwam was overspread with a roof of seal-skins sewn together (*kaíkis*). This was a heavy and cumbersome object to handle, and hence was usually divided into two or even three sections, each of which could be transported in a separate canoe. Thus each house sheltered two or sometimes three families, usually closely related. In such a dwelling one family lived on each side, separated by a door facing the beach, a central fire, and sometimes a second door at the rear. The entrances could be closed with a flap of seal-skin.

FIG. 52.—Modern Yahgan house.

In recent years the Yahgan have used in summer a log tipi covered with burlap. The small burlap-covered shelter shown in fig. 52 was occupied by eleven individuals in the summer of 1923–24. Thus housed they have had immeasurably poorer protection from the weather than in the days when hunger drove them to secure many seals and consequently many seal-skins were available for housetops.

The Yahgan kept their houses warm by building the tops low, for they appreciated the fact that heat rises. To take further advantage of this propensity they scooped out the floor to a depth of two or three feet or more. Thus the fire could be placed at the bottom of the pit while the inmates occupied a higher level, where bunks were outlined with logs held in position by stakes driven in the sloping floor. In old camp-grounds where the accumulated shell and ash gave excellent drainage, the pitted house floors reach

as much as five feet below the surface. Here the housetop need scarcely have risen above the ground level, and the people within must have been snugly lodged against winter gales. But the swirling smoke was a constant annoyance, and many accounts speak of the Yahgans' red and inflamed eyes.

Initiation or ceremonial houses differed from the living houses chiefly in size. In the west they were domed and oval in outline, as shown in pl. XIV. In the east they took the form of a heavy solid tipi-shape dwelling of logs like the Ona initiation lodge (fig. 38).

Under mission influence the Yahgan in late years built small plank houses of European type. A group of these was found at Puerto Mejillones and Porto Piedra on Navarin island which were used as winter quarters (pl. XVIII). They were wind- and water-tight, and some had wooden floors, bunks, and stoves. The material for their construction was begged, stolen, or picked up on the beach.

Camp Equipment

Yahgan camp equipment, in spite of superior transportation facilities, was just as primitive as that of the Foot Indians, among whom every article, and the infants as well, had to be carried on the back. Strong and simple as are the objects below listed, they

FIG. 53.—Yahgan fire-making apparatus. *a*, Flint; *b*, pouch; *c*, tinder; *d*, pyrites. Width of bag, 5 in. (14/2352)

afforded a basis for little more than the mere act of existence and mutely testify to the cultural poverty of their makers.

1. Fire-making Apparatus.—By all accounts the Yahgan rarely made fire, because they carried it with them on the hearths in their canoes. In their semi-nude society to lack fire might mean death, and so wherever they went they tried to husband a wisp of flame. When it was necessary to kindle a new blaze they used flint and pyrites (*s^{e}wálli*) with dried fungus or down for tinder, after the fashion of the Ona. Various places in Fuegian waters where pyrites can be secured are mentioned on page 65; one of these, Merton island, lies in Yahgan territory. However, Rev. Thomas Bridges states that they got this material by trade with the Alacaluf, who obtained it on Clarence island. Especially fine flints were found in a valley called Aníawaía between Lapataía and Ushuaia. To protect the fire-making apparatus from the weather it was kept in a small hide pouch called *asánu* (fig. 53, *b*).

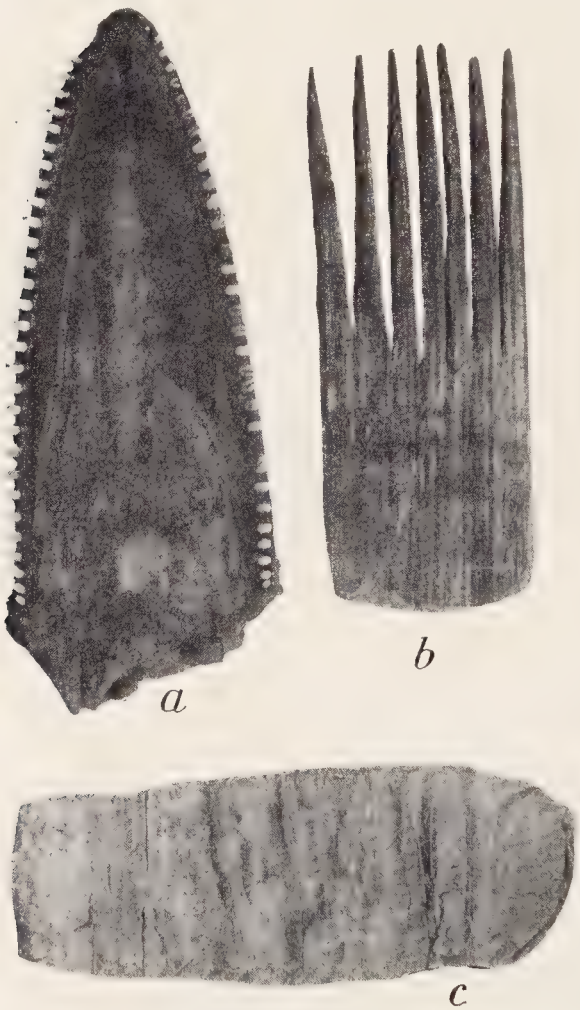


Fig. 54.—*a*, Porpoise-jaw comb; length, 6 in. (14/2370). *b*, Whalebone comb; length, 5½ in. (14/2374). *c*, Seal-throat pouch; length, 8½ in. (14/2369)

2. Fire-tongs. — For tending the fire and for removing the objects from it the Yahgan used tongs. These are no more than a stick an inch or so in diameter and a couple of feet long, split for three-quarters of its length. Cultural borrowing is indicated by the name of this implement—*láka* in Yahgan,

lákel in Ona,—but there is no means of determining which tribe was the inventor.

3. Hammer and Grease Stone.—On old camp-sites numerous smooth, water-worn stones can be picked up. They were used as hammers to break open various shellfish, and also they served as anvils for cracking hot marrow-bones to allow the grease to solidify on the cool surface, whence it could be scraped up and eaten.

4. Broom.—The Yahgan housewife today occasionally sweeps out her domicile, employing for that purpose the wing of some large bird such as a goose. This custom probably is not aboriginal, but is rather the result of missionary contact.

5. Comb.—The Yahgan sometimes comb their hair, and for this they make rude combs (*ushtánim*) of whalebone or employ the jaw of a porpoise. Combs of both types are illustrated in fig. 54, *a*, *b*.

6. Spatula.—Another article for beautifying the person, found in the well-ordered Yahgan house, is a small spatula (*telákikamána*) used for painting the face and body. One of these appears in fig. 69, *d*.

Fig. 55.—Yahgan bark bucket. Height, 12½ in. (14/2267)

7. Bucket.—Under the Ona manner of existence a bark bucket (fig. 55) would have been of little service, for it would soon be broken under the exigencies of their system of transport; but the Yahgan found the bucket (*atakála*) an extremely valuable object, and used it to bail their canoes and to store water in their camps. Like the canoe itself the bucket was made from the bark of the evergreen beech, but while the canoe was man's work, the bucket was woman's work. Hence the bark for the bucket was removed from the tree with the woman's barking tool (*téshupu*), which is a chisel-like device made from the leg-bone of the guanaco (fig. 68). The inner fat lining of the bark was then scraped off, and a rec-

tangular piece was cut for the sides and a circular piece for the bottom of the bucket. Narrow strips of whalebone were then scraped thin and pliable, and the bottom and sides were sewn tightly together (fig. 56, *b*). Around the inside of the lip a strip

FIG. 56.—Yahgan women. *a*, Rope-making; *b*, Making a bark bucket.

of wood—*leña dura*, Winter's bark, or barberry—was introduced to give additional strength and to prevent the bark from splitting. Finally a hide thong was attached to serve as a handle, and the whole outside was painted red.

In general the Yahgan buckets are taller in proportion to their width than those of the Alacaluf. The Alacaluf seem to have been better craftsmen than the Yahgan, hence their buckets are usually more neatly finished.

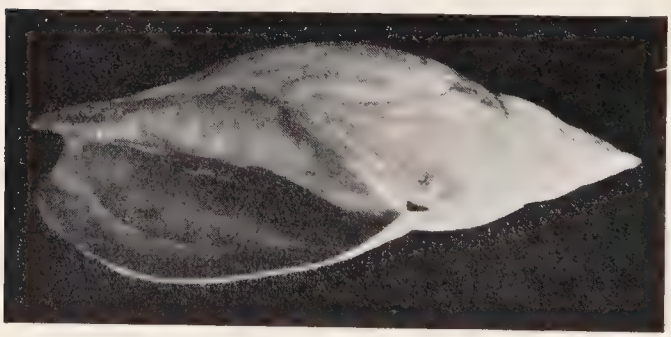


FIG. 57.—Yahgan shell cup. Length, 6½ in. (14/2372)

8. CUP.—A Yahgan refinement over the Ona is the use of a shell cup (*auflán*). As seen in fig. 57, this is nothing more elaborate than a simple shell, its shape in no way modified. Such a receptacle could be used to dip water from a bark bucket, but would have been of little service in removing water from the Ona skin water-bag.

9. Pouches and Bags.—For storage the Yahgan used various pouches, bags, and baskets. While there seems to have been a tendency to employ the most readily available material, at the same time certain definite types of bags were normally used for distinct purposes. For general storage, bags were made from the skins of the seal, penguin, and guanaco. For keeping the fire-making apparatus, a small guanaco-hide bag covered with red paint was used (fig. 53, *b*). A larger bag of guanaco-hide (*humulúf*) covered with white paint was employed by the shaman to store his ritualistic paraphernalia (fig. 94). For porpoise- or whale-oil, containers were made from water-proof substances, such as seal-gut (*kália*), seal-bladder (*athhlaháni*), or a species of giant kelp (*shówen*) which grows around the seaward islands. In fig. 58 we illustrate

Fig. 58.—Yahgan seal-bladder oil container. Length, 7½ in. (14/2338)

an oil container of seal-gut. Red paint they habitually stored in small sacks (*yái*) made from the throats of seal (fig. 54, *c*). A recent invention is the otter-tail pouch (*yeten*) employed at the present time for carrying tobacco.

10. Baskets.—All the Canoe Indians of Tierra del Fuego and the west coast of Chile to the north make baskets. This art is probably the most intricate technological achievement of the Yahgan, Alacaluf, and Chono, so that we shall consider the making of baskets in some detail. Among the Yahgan, the writer found that four types were manufactured, of which only one has been adequately described. Two of these are based on half-hitches around a coiled foundation; one has half-hitches without foundation; while the fourth, employed as a dip-net, is a wrapped stitch.

The material used for all four kinds of baskets is a native grass

(*Juncus magellanicus*) known to the Yahgan as *mápi*. This is a coarse, round-stemmed grass, about 18 inches in height, which resembles the grass of our saltwater marshes. It is picked by the women and carried to the encampment in long bundles. The handsomest baskets are those woven in the fall when the frost has changed the greens to red, but this brilliant color fades after a few weeks. During the course of manufacture, each grass-stem is chewed to flatten it and to make it more pliable.

FIG. 59.—Yahgan basket of *tawĕ'la* type. Height, 6 in. (14/2317)

In discussing the various kinds of Yahgan baskets below, the different weaves have been designated by their native names. These types are:

a. *Tawĕ'la*.—This class of basketry, normally called "Fuegian basketry" in ethnological literature, is by far the commonest kind in use (fig. 59). It may be described as a half-hitch or buttonhole stitch over a coiled foundation.

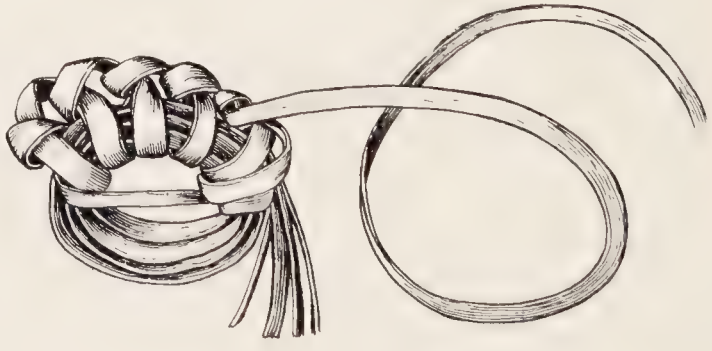


FIG. 60.—Method of beginning a *tawĕ'la* basket. (14/2319)

The process of manufacture starts with selecting three or four stems of grass, placing them together, and bending them to form a little circle about half an inch in diameter which becomes the bottom of the basket. The loose stems forming this circle are

then lashed in place by a series of half-hitches, which leave the part of the foundation stems not included in the circle projecting at a tangent from it. Fig. 60 illustrates this initial step in the manufacturing process.

Next the projecting grass-stems are bent to form a second circle around the original one. In this position they are lashed by a second series of half-hitches, which are inserted through the loops of the first row with the aid of an awl (fig. 69). This process may be studied in fig. 61. It is repeated, additional grass-stems being

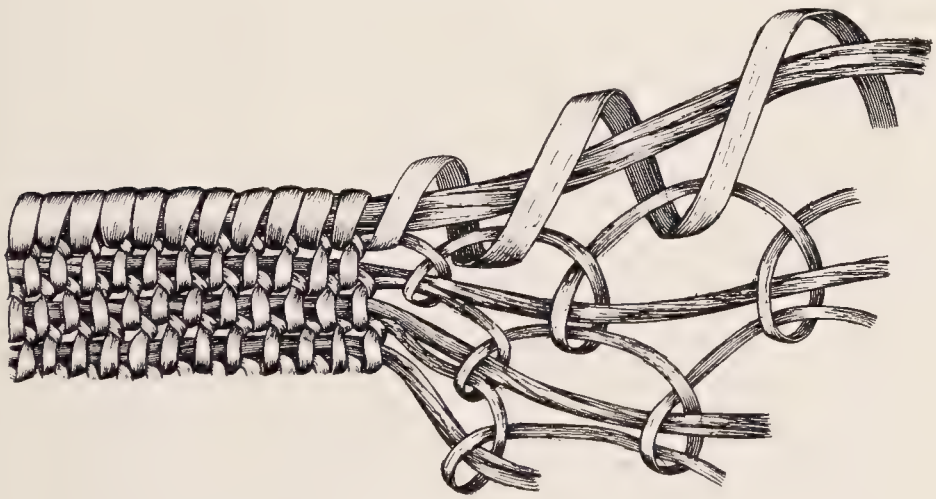


FIG. 61.—Detail of *tawĕ'la* basket. Height, 1 in. (14/2288)

added as necessary, until a circular piece of woven material two or three inches in diameter is created.

At this stage it becomes necessary to curve the sides of the basket, so the finished fragment is suspended at a suitable height by passing a cord through the hole in the center of the base and tying it to a small toggle. In this position, mouth downward, both hands are free for the weaving, and the foundation coils can be controlled to give the desired shape.

When the body of the basket has been completed, the edge is finished by a simple spiral wrapping considerably broader than is used in the rest of the weaving.

Next, two loops are attached at opposite points of the rim, and also are covered with spiral wrappings. To these loops a handle of braided grass is fastened, and the basket is completed.

In comment on this kind of basket we should point out that

coiled baskets are found along the entire west side of the New World in practically unbroken distribution, and also to the west across the Pacific. The Fuegian or half-hitch coil is also found across the Pacific, a fact that has given rise to much unrestrained speculation on the origin of the Fuegians. Variants of the half-hitched coil, somewhat similar to the *uloánastába* basket presently to be described, have been noted by the writer in Basket-maker collections from the Southwest and in collections from Kentucky caves, both of great antiquity.

Several authorities have argued that coiled basketry is not a very ancient type. With this the writer does not agree, because, in the New World at least, coiled basketry is the most widely distributed kind known, and also because it is almost the only type of basketry associated with the most ancient New World archeo-

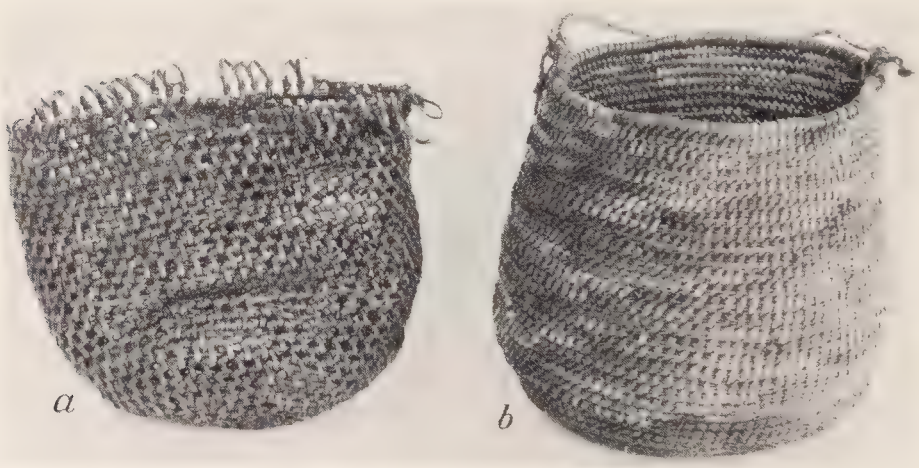


FIG. 62.—Yahgan baskets of *gaiíchim* and *uloánastába* types. Height of *b*, 6½ in. (14/2312, 2288)

logical finds now known. In other words, it seems to the writer that one would expect *a priori* that the basketry of an isolated and backward people like the Yahgan would be of the coiled variety.

The hitch-coil is typical in South America only of the Yahgan, Ona, and Alacaluf, but it turns up sometimes in the Amazon valley and to the northward. A Surinam hat illustrated by Goeje [1] is woven in a fashion exactly like the Yahgan *tawĕ'la*.

b. *Uloánastába*.—This weave, illustrated in figs. 62, *b*, and 63, is very rarely employed among the Yahgan, and a single specimen

[1] *Intern. Archiv für Ethnogr.*, Bd. XVII, Suppl., 1906, pl. IX, fig. 13.

was secured only with difficulty. Like the *tawĕ'la* weave it is a series of half-hitches built up over a coiled foundation, and the steps taken in the manufacture of the two types are the same. Also the rims and the handles in both types are identical.

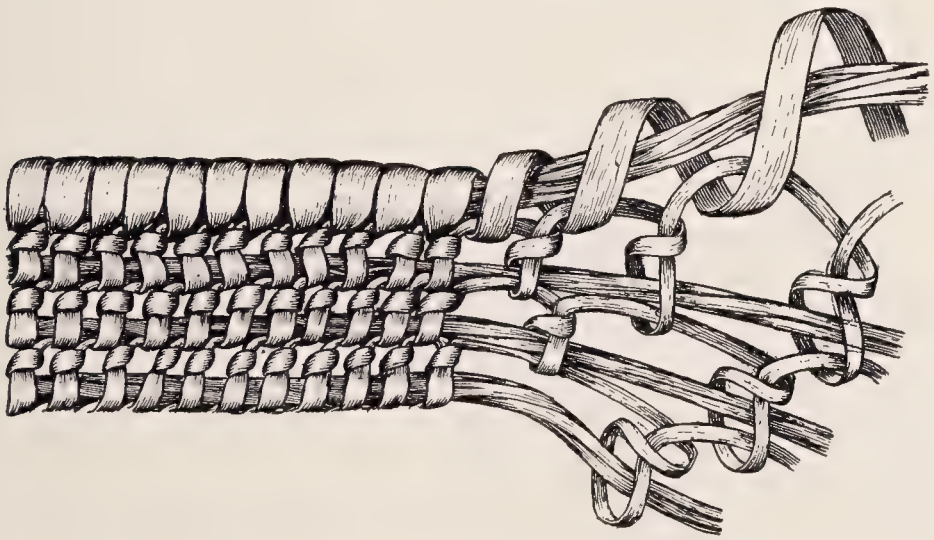


FIG. 63.—Detail of *uloánastába* basket. Height, 1 in. (14/2317)

The difference between the *tawĕ'la* and the *uloánastába* lies in the fact that the former is a simple half-hitch while the latter is a twisted half-hitch, for at each knot the weft takes a half-turn around itself. This distinction may be seen by comparing figs. 61 and 63.

More elaborate twisted-hitched-coiled baskets are found in Central America, notably among the Pipil and Lenca of Salvador, in collections from Pacific islands near the meeting point of Polynesia, Melanesia, and Micronesia, also in Africa, and among Bush negroes in the Guianas, and doubtless elsewhere. This world-wide distribution of the type leads to the belief that it may be an ancient form of basketry. The only exact New World parallel to the *uloánastába* which has come to the attention of the writer is an Alaskan specimen illustrated by Mason,[1] a bark vessel to which a wooden lip has been sewn in a manner identical with the Yahgan stitch.

[1] Aboriginal American Basketry, *Rep. U. S. Nat. Mus. for 1902*, fig. 90, Washington, 1904.

c. *Gaiíchim.*—A third class of Yahgan basketry, not very common at least in recent years, may be described as a knotted weave without any foundation (fig. 65). The body of the basket is built up in a series of interlocking knotted loops, resulting in a soft and flexible container (fig. 62, *a*). In order to stiffen the basket and to secure a wide-open mouth, the rim is finished off in a series of loops and in these a circle of wood —Winter's bark or barberry — is inserted, as shown in fig. 64. To this rim is attached a three-member braided handle.

FIG. 64.—Yahgan basket of *gaiíchim* type. Height, 4½ in. (14/2313)

When completed the *gaiíchim* often shows irregularities, so the interior is packed tightly with sand or small pebbles which are kept moist until the basket has assumed a symmetrical shape. The result of this stretching process is seen by comparing figs. 62, *a*, and 64.

d. *Chiwanúsh.*—A fourth type of Yahgan basket, illustrated in fig. 89, was lashed to a pole and used as a dip-net for catching small fish. The completed net with the handle may be seen in the bow of the model canoe in fig. 73.

The *chiwanúsh* consists of a circular opening of Winter's bark or barberry wood, to which four U-shape members of the same material were secured. The interstices were then filled in with strips of grass of the kind above indicated, looped about the solid frame.

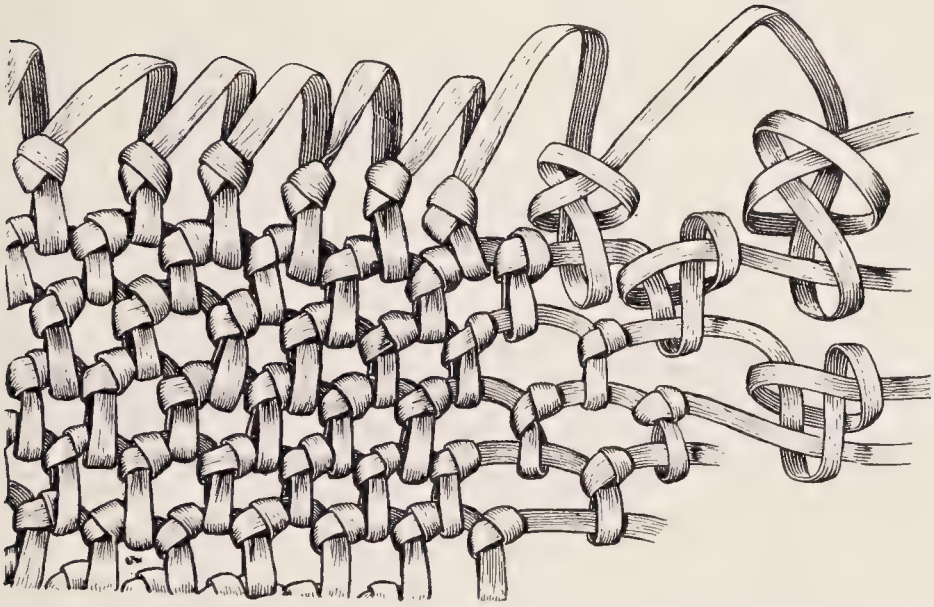


FIG. 65.—Detail of *gaiichim* basket. Height, 2 in. (14/2312)

TOOLS

Yahgan tools are just as primitive as the Ona tools, although adapted to different uses. The Yahgan have a constant tendency when making something to pick up the first object that comes to hand—a bit of shell, a fire-flaked stone—and employ it, rather than to take the trouble to get steel tools which would better serve their purpose.

1. SCRAPER.—The old-time Yahgan scraper (*tu^{a}wĕ'na*) was a mussel-shell blade (*káluf*) set on a stone handle (*áwi*). The shell blade was not the ordinary mussel-shell, but a giant variety (*chiamúnka*), four or five inches in length, which now grows on the beaches of the outer islands toward the Antarctic. Formerly, however, it must have flourished on Beagle channel, as many examples were found in the interior of a shellheap at Harberton. To set this shell blade on the stone handle, the edges of the base of the shell were carefully broken away in order to reduce the curve and make the blade lie flat against the stone. However, the blade could not be attached directly to the stone, or it would have broken too easily, hence it was bedded on a small bunch of shredded barberry wood (*chélerr* [1]) or a wad of moss (*hánakóhl*). These two

[1] This word was obtained from a Lennox islander. I am not certain whether it means "shredded barberry" or whether it is a dialectic variant of the central

variant forms are seen in pl. x, *a*, *b*. For lashings on scrapers the Yahgan used either a seal-hide thong (*tuwawáru*, pl. x, *a–c*) or else a braided whale-sinew line (*tápim*, pl. x, *d*) such as was employed for fishing.

Since the European settlement the natives have substituted a steel blade (*hárfkar*) for the shell whenever possible, and the resultant tool is called *wána*. It is illustrated in fig. 66, *a*. They

FIG. 66.—Yahgan scraper and whetstone. Length, 11 and 9½ in. (14/2367, 2325)

now also set the steel blade in a split wooden handle in the same fashion as the Ona, as can be seen in pl. x, *c*.

The scraper was the most important tool to the Yahgan and served a great variety of purposes. Owing to the weight of the stone handle it could be used not only for scraping but also as a serviceable hand-ax. When the shell blade became chipped or dull it was sharpened on a stone (*chípi*) with a long flat surface (fig. 66, *b*). In type this scraper corresponds to the Ona wood scraper (fig. 25, *a*).

In the old days before steel was available, the Yahgan are said to have used a tool like the transverse Ona flesh-scraper (fig. 25, *b*). This was denied by Yahgans whom I questioned, but was affirmed by Mr. William Bridges, whose statement was supported by the discovery of ancient stone blades apparently designed for transverse hafting (fig. 104, *b*, *c*). The abandonment of the transverse scraper may be due partly to the use of steel, but also may be accounted

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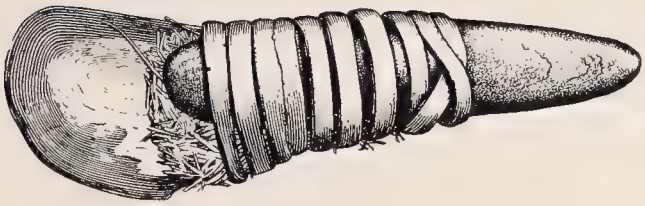
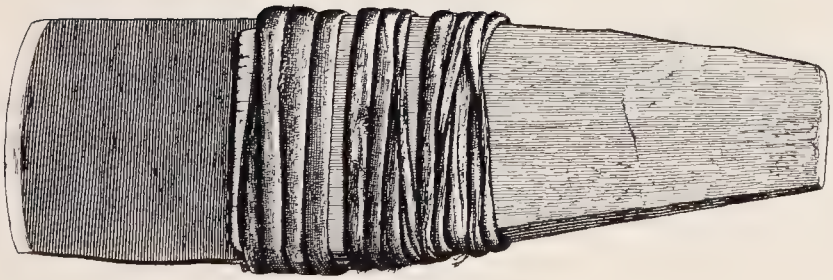
Yahgan *chélia*, which means "barberry" in general (*Berberis ilicifolia*). Shredded barberry was also employed as a towel after bathing.

a



b



c

d

YAHGAN SCRAPERS

a, *b*, *d*, PRIMITIVE TYPE; LENGTH, 14, 10½, 9 IN. (14/2364, 2366, 2365). *c*, MODERN TYPE; LENGTH, 6 IN. (14/2368)

for on the ground that since the Yahgan have ceased to use skin houses and skin clothing they have much less need of such an implement.

2. KNIFE.—Ancient knife-blades from Beagle channel are described on page 190. In recent years the Yahgan, like the Ona, have made knives from any available scrap iron or steel.

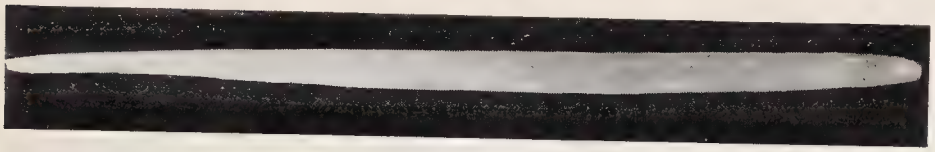


FIG. 67.—Yahgan man's bark-working tool. Length, 31 in. (14/2332)

3. BARKING TOOLS.—The Yahgan employ two kinds of tools for removing bark from trees. One of these (*sánakaí*), used exclusively by the men (fig. 67), is made from a large piece of the jaw-bone of a whale and has a blade usually at each end. The woman's tool (*téshupu*) is part of a guanaco leg-bone and consequently is much smaller (fig. 68); it has a single chisel-like blade, while the other end, the articular extremity of the bone, forms a convenient handle.

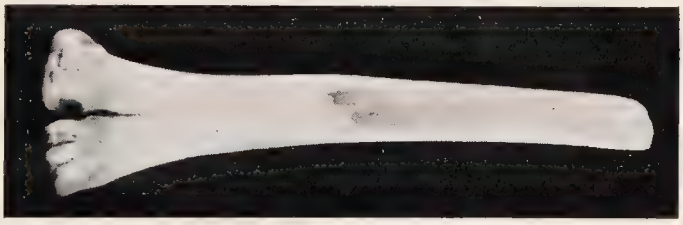


FIG. 68.—Yahgan woman's bark-working tool. Length, 9 in. (14/2331)

4. AWL.—The old-time awl (*ámi*) was a sharpened bit of wood or of bone (fig. 69, *c*, *e*), but in recent years the Yahgan have used a nail set in a wooden handle (fig. 69, *a*, *b*). Awls were employed for piercing skins to make clothes, housetops, and bags; to pierce bark in the manufacture of canoes, bailers, and buckets; and also for the weaving of baskets.

Like the Ona, the Yahgan had no drill, and so their material culture was limited by the fact that they were unable to make holes in such a relatively soft substance as wood.

5. HAMMERSTONES.—Usually present on Yahgan camp-sites are a number of stones which show marks of abrasion (fig. 70). The

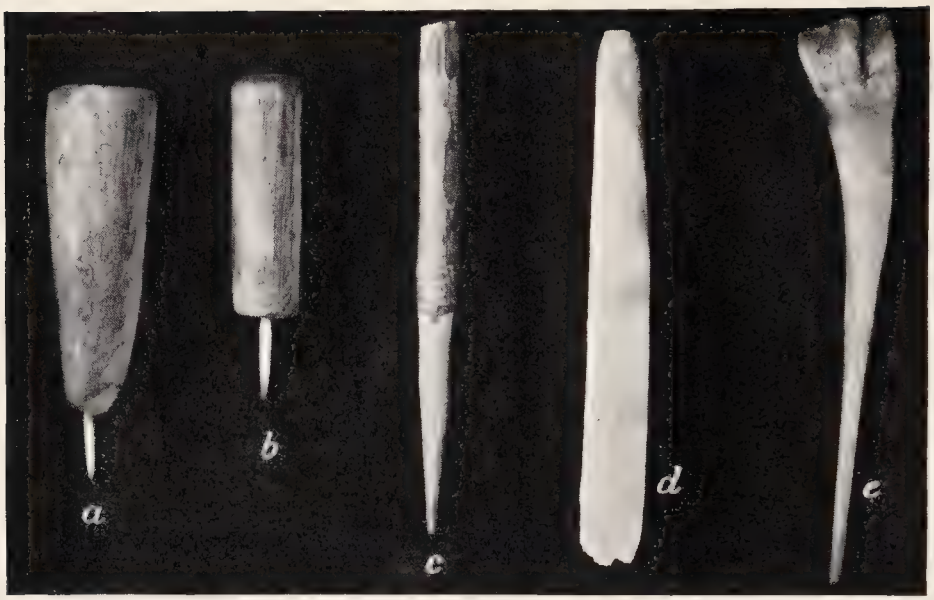


FIG. 69.—Yahgan awls and spatula. Length, $3\frac{1}{4}$ to $5\frac{1}{2}$ in. (14/2376, 2376, 2378, 2333, 2334)

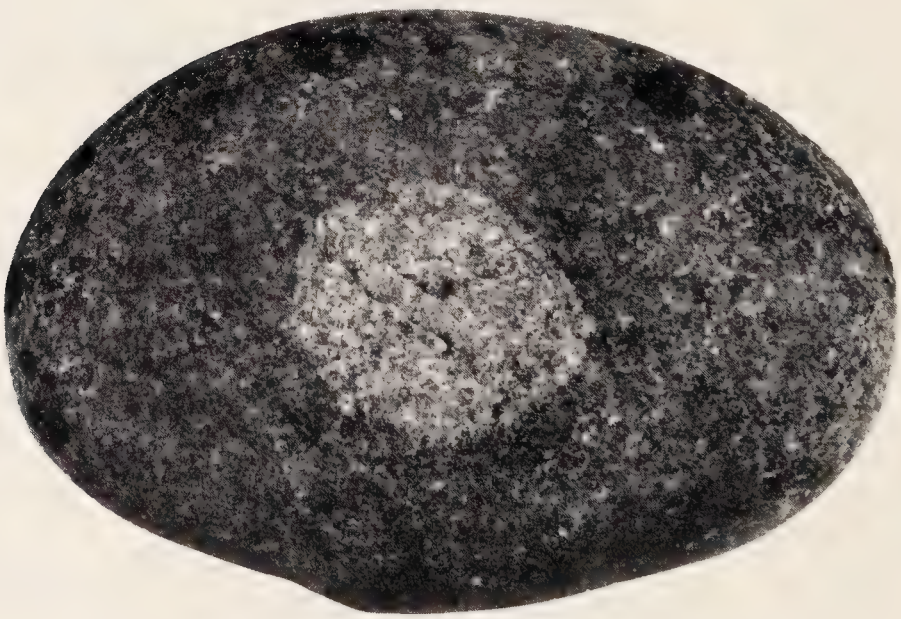


FIG. 70.—Yahgan hammerstone. Length, 5 in. (14/3984)

principal purpose for which such stones were used was opening shellfish. These stones never were hafted.

6. SHARPENING STONES.—For sharpening knife and scraper blades the Yahgan employed a smooth stone (*chípi*) such as is shown in fig. 66, *b*. They can frequently be picked up on old camp-sites. The rounded hammerstones may also have been employed for sharpening.

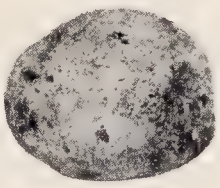


FIG. 71.—Yahgan pumice polisher. Length, 2½ in. (14/2224)

7. PUMICE.—For polishing, in place of our sandpaper or the Ona fox-skin and grit, the Yahgan used pumice (*hiól*). This material (fig. 71) is found on Picton island and on the coast of Tierra del Fuego to the north. It frequently floats down Beagle channel and may be picked up on the beach.

BOATS AND BOATING

BARK CANOE

In the old days the Yahgan used a curved bark canoe which in outline is well described by Goicueta's phrase, "like a moon of four days, with raised tips." The last one ever afloat is shown in fig. 72.

FIG. 72.—The last Yahgan bark canoe ever used. (Courtesy of Rev. John Williams.)

The bark employed (*aíirshun*) was taken from the evergreen beech (*Nothofagus betuloides*), known to the Yahgan as *súschi*. It had to be stripped from the tree in the spring (October or November) when the sap was rising. For this purpose a tool made from the jaw-bone of a whale (*sánakaí*) was employed (fig. 67), and the

men ascended the tree by means of a thong of seal-skin (*wurrsh*). An industrious and forehanded man often removed two pieces of bark at the right season of the year in case his canoe might be wrecked. The extra piece was placed under water in a running stream to keep it flexible and was held there by means of stones. The piece intended for immediate use was scraped with a shell scraper (*tuᵍwĕ'na*) until the fat inner bark (*ushkaq*) had been removed. The bark was then cut to pattern, three cigar-shape pieces usually serving for the skin of the canoe.

The bark was next tightly sewn together with pieces of whalebone, or, if none were obtainable, with saplings warmed before the fire and shredded when very hot. Split saplings were then set close together for ribs (*ushkúlakin*), and the ends of these were held in place by tapering gunwales (*wurri*) lashed to the bark sides (fig. 73).

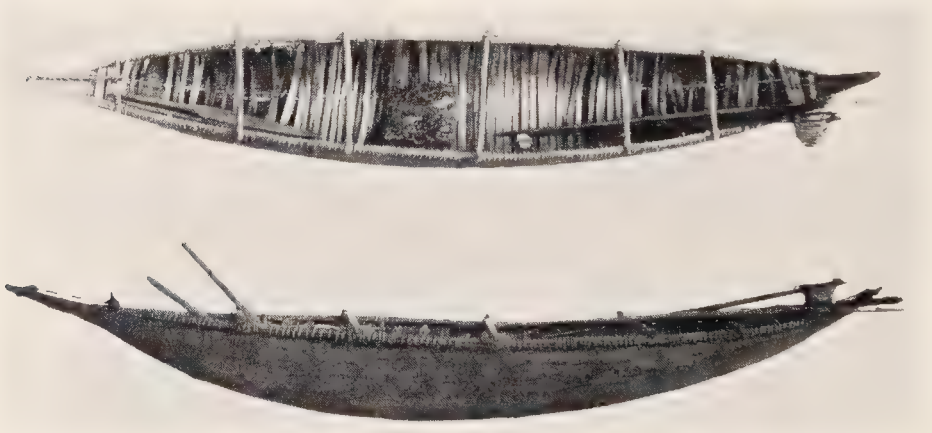


FIG. 73.—Model of Yahgan canoe. Length, 40½ in. (14/4331)

Across from gunwale to gunwale, thwarts, usually six in number, were lashed in order to keep the sides from collapsing. Finally the slender bow and stern were joined to the nearest thwart by a seal-hide thong or a braided grass rope in order to give additional strength to the extremity of the vessel.

To complete the canoe a fireplace (*af*) was installed amidships, for even in these days of matches and European clothes no Yahgan goes to sea without his fire. The fireplace consisted of a heavy piece of sod with much earth attached. Over this was a layer of pebbles, and the whole was soon covered with ash. In the bow a rest for harpoons was installed.

When fully equipped, the Yahgan canoe carried the following articles:

two or more paddles
three kinds of baskets
two fire-tongs
four spears (fish, seal, crab, and limpet)
dip-net
club
grass mooring rope or thong
bark bucket
fish-line.

Such was the bark canoe in which these Indians often ventured far from shore and even attacked whales. Its great virtue was that it could be made with few tools; indeed in an emergency it could be created with no more than fire and a knife. Furthermore, its high pointed ends made it seaworthy. On the other hand, the seams often leaked and the beech-bark is brittle—much more so than the birch-bark of the North American canoes. The canoes of bark found nearest to Tierra del Fuego are those of Brazil. Their construction is so different, however, that there seems no possibility of relationship between the two types.

DUGOUT CANOE

The first dugout canoe used by the Yahgan was made near Ushuaia about 1880 by an Indian known as "John Furness." This innovation apparently was an independent invention, instigated through the introduction of metal tools during the previous decade. At any rate the idea rapidly became popular, for the advantage of the stronger construction over the bark canoe was patent, and indeed the Alacaluf soon seized upon this type and abandoned their plank canoes.

FIG. 73A.—Yahgan dugout canoe. (Courtesy of J. L. Weld, Esq.)

In outline the dugout canoes resembled their bark prototypes, modified by the material of which they were wrought. Thus, through ineptitude or a fault in the wood, one end sometimes was not pointed but was cut off square. Into the opening a tail-board was then fitted. This usually leaked. The sides of the canoe often were raised by nailing on boards.

FIG. 74.—Modern Yahgan boat. (Courtesy of J. L. Weld, Esq.)

With the coming of Europeans the Yahgan adopted the use of oars and sails. The latter were raised on temporary masts and could be employed only when running before the wind.

The Yahgan bark canoe has gone entirely out of use today, and the writer was unable to discover an Indian competent to make one properly, although models can yet be obtained. The dugout canoe is still in use, but it is many years since a new one has been launched. The last double-ended dugout afloat (fig. 73A) was purchased and is now in the Museum. It is 16 feet 6 inches long, 3 feet wide, and 2 feet 7 inches deep. When purchased it had been in the water many years and was unbelievably heavy. Also it was the most unstable vessel in which the writer has ever set foot.

DORY

Today the few surviving Yahgan use a flat-bottom dory with square stern and high-pointed bow (fig. 74). This boat is of European manufacture and carries no mark of native identity except a fireplace. Today the fireplace is no picturesque affair of sod, but usually is an upright five-gallon gasoline tin, half-filled with stones, and with a hole cut in the side to facilitate the draft.

PADDLES

The old-fashioned paddle (*ápi*) had a long pointed blade and a short rounded handle (fig. 75). The blade was diamond-shape in

FIG. 75.—Yahgan paddle. (After Hyades and Deniker.)

section, so there was a tent-like ridge centrally down each side. Today most of the blades have rounded tips, a shape which the Yahgan may well have adopted from the Alacaluf.

The women, who were the paddlers, often joined their men folk in fighting, using their paddles with deadly effect.

MOORING ROPES

Canoes were moored either with a seal-skin thong (*wurrsh*) as shown in fig. 76, or more commonly with a braided grass rope (*shukamí*) such as is seen in fig. 77. The process of braiding the rope is illustrated in fig. 56.

FIG. 76.—Yahgan seal-hide thong. Diameter of coil, 8 in. (14/2347)

CANOE BAILER

As all the Yahgan canoes leaked more or less, some kind of a bailer was imperative to keep them afloat. For this purpose a bark bucket like the water-bucket, but not so tall, normally was used (fig. 78). The writer has seen small seal-skin buckets said to have been used for this purpose.

CARE AND MANAGEMENT OF THE CANOE

The canoe was paddled by the women, who sat in the stern, while the men crouched in the bow to cast the spears. When paddling, owing to the short handle, one hand was under water.

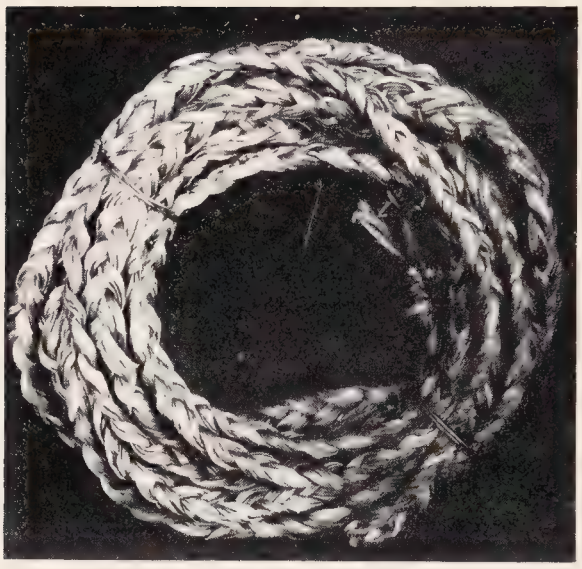


FIG. 77.—Yahgan grass rope. Diameter of coil, 5½ in. (14/2349)

As a result of the exercise, the women were very strongly developed above the waist, but poorly developed in the legs.

When it was desired to make a landing the canoe was paddled in to the beach, bow-on, and the man of the family and the children stepped ashore. The wife then paddled the canoe out to a piece of kelp, moored it, and swam ashore. As a result all the women were able to swim, while few of the men could do so.

The canoe was kept in the water habitually, because hauling it up on the beach was difficult owing to the fragility of the bark. When it was necessary to make repairs, the beach was carpeted with wet kelp to make a soft and slippery surface over which the canoe could be dragged with ease. The dugout canoes, however, were a different proposition, so for them runways were made by removing the stones (pl. XI). Stakes were driven at the head of the runways to which the canoes were tied. Campsites used habitually since the invention of the dugout may be distinguished by the presence of such runways.

FIG. 78.—Yahgan bark bailer. (After Hyades and Deniker.)

WEAPONS AND METHODS OF HUNTING

SPEARS

Yahgan weapons were the spear, club, sling, and bow. In their fashion of living, spears were almost as import-

PORTO PIEDRA

PUERTO MEJILLONES

CANOE RUNWAYS, NAVARIN ISLAND

FIG. 79.—Yahgan spears. *a*, Limpet-spear (14/2272); *b*, Seal-harpoon (14/2271 c); *c*, *d*, Fish-spears (14/2273, 2271 f); *e*, Crab-spear (14/2272). Length, 8½ to 13 ft.

ant as the bow among the Ona. The use of this weapon was taught from childhood; practice in casting a headless spear, usually with an old basket as a target, was a frequently enacted sport. The basket was slung far ahead from the end of a spear; then all the young men present would cast at the target, walk up to recover their shafts, and toss the basket ahead again.

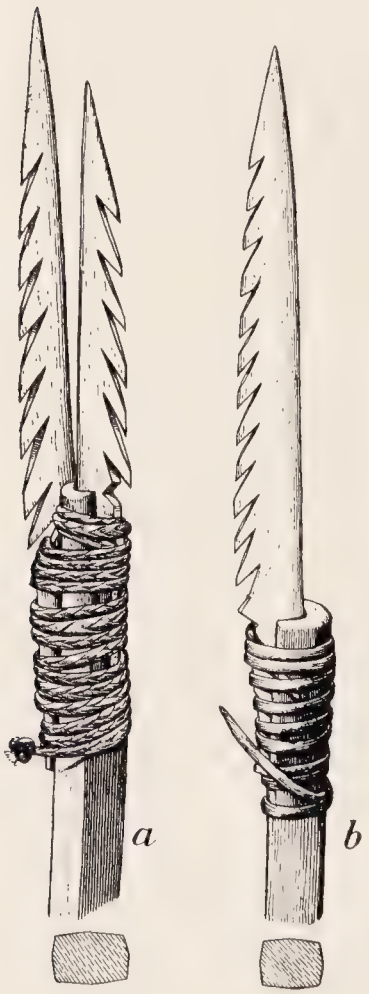


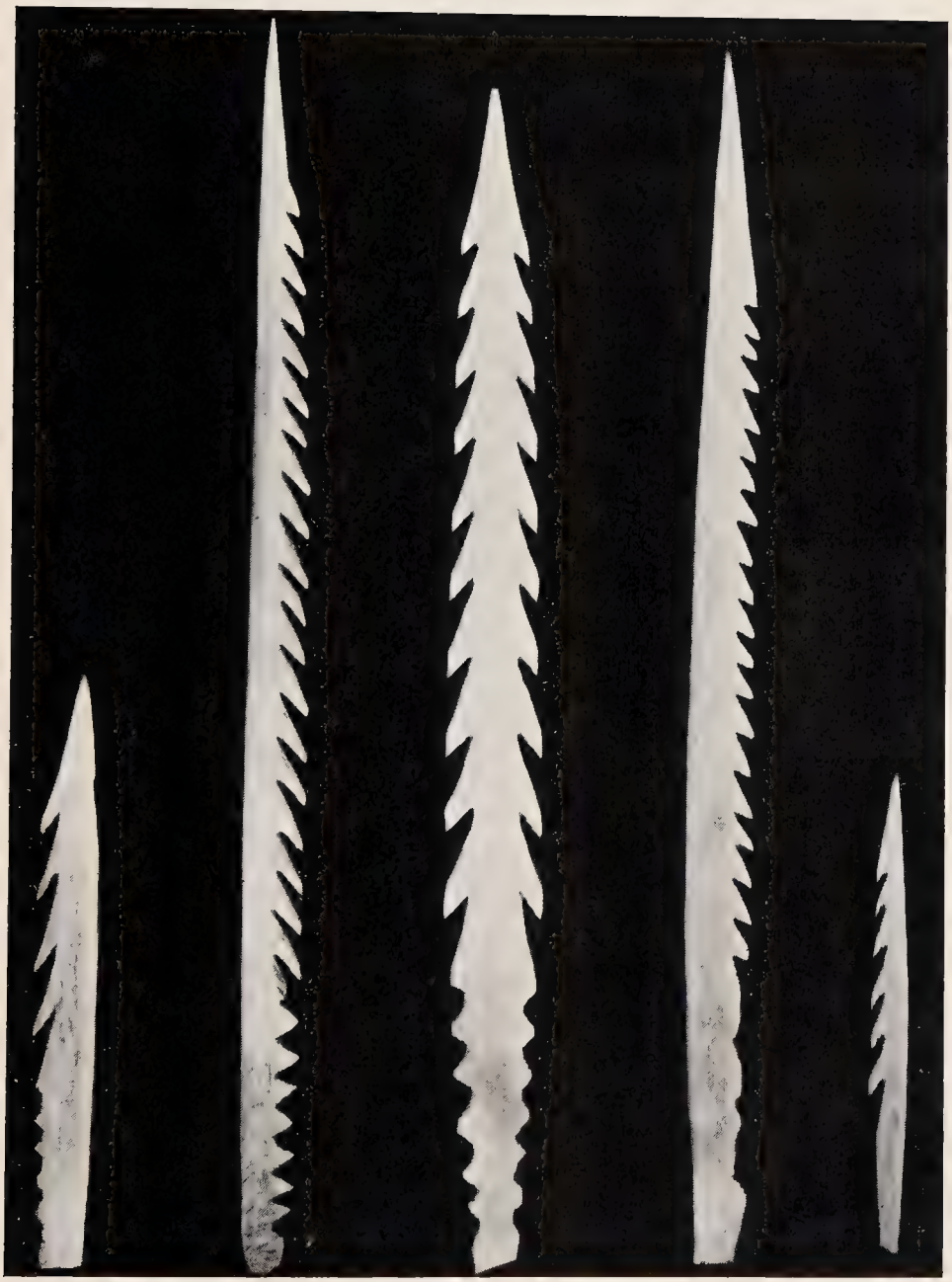
FIG. 80.—Yahgan fish-spears. Length of point of *b*, 10¾ in. (14/2273, 2271)

In fig. 79, drawn to scale, are shown five types of Yahgan spears, each designed for a special purpose, differing in point, shaft, and lashing. These details and certain regional variations we shall discuss at length.

1. BIRD- AND FISH-SPEAR. — This spear (*shushróya*) is an all-purpose spear, but it was specifically intended for capturing fish and birds. It was commonly used in warfare. It may be briefly described as a beechwood shaft tipped with a serrated whale-bone head lashed in place with seal-hide or braided sinew (fig. 79, *c*, *d*).

The shaft of this spear (called *shoshaía*) is eight-sided, as can be seen in fig. 80, having four wide and four narrow surfaces. In casting, the flat of the shaft was placed on the palm of the hand. The head of the shaft is about three-quarters of an inch in diameter; the central diameter is nearly twice as much; at the butt it tapers to a point. Red or sometimes black paint covers the completed shaft. On one side of the head-end of the shaft a slot is cut, into which the tang of the spearhead is inserted and there lashed with a seal-hide thong. This is shown in fig. 80, *b*.

The head of the fish-spear is cut from the lower jaw-bone of a whale. In the old days whales were plentiful in Beagle channel and the waters to the south, but since the establishment of whaling



a *b* *c* *d* *e*

FISH-SPEAR HEADS

d (14/2253), ALACALUF; OTHERS (14/2329, 10/9833, 14/2330, 2329), YAHGAN.
LENGTH, 6 TO 16 IN.

stations on South Georgia,[1] some years ago, they have become exceedingly rare. During the writer's visit to Beagle channel the supply of whalebone became completely exhausted, and it was said that four years had elapsed since a whale had come ashore.

Details of the spearhead hafting appear in fig. 80. The usual assemblage is that shown in *b* where a single point has been set in a deep notch and secured there by heavy spiral lashings. Sometimes, when the presence of certain kinds of fish made it desirable, a second point was set against the side of the shaft opposite the notch and there secured by lashings of the usual kind.

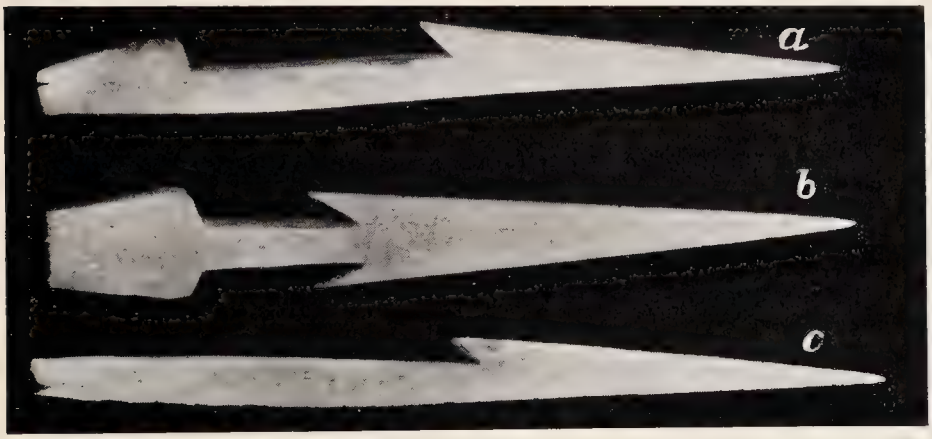


FIG. 81.—Yahgan spearheads. *a*, *b*, Seal spearheads (14/2327, 2328); *c*, Guanaco spearpoint (14/2321). Length, 11½ to 12 in.

In size fish-spear heads range from six to eighteen inches, with anywhere up to twenty barbs. Eastern and central Yahgan points (pl. XII, *a–c*) have barbs along one side only. In the west this type, and also points with barbs along both sides, were used (pl. XII, *c*). Among the Alacaluf, I was informed, both single and double rows of barbs were employed. Pl. XII, *d*, shows a point made by an Alacaluf living with a Yahgan wife on Navarin island; it differs from Yahgan workmanship in the superior finish.

The tools employed in manufacturing the spearpoint were: (1) a stone hammer to secure a bone fragment of proper size, (2) a shell scraper or knife to shape the blade, and (3) a piece of pumice to polish it.

Yahgan fish-spear heads are strikingly like bone spearpoints

[1] A recent account of this industry will be found in Morley and Hodgson's Whaling North and South, New York, 1926.

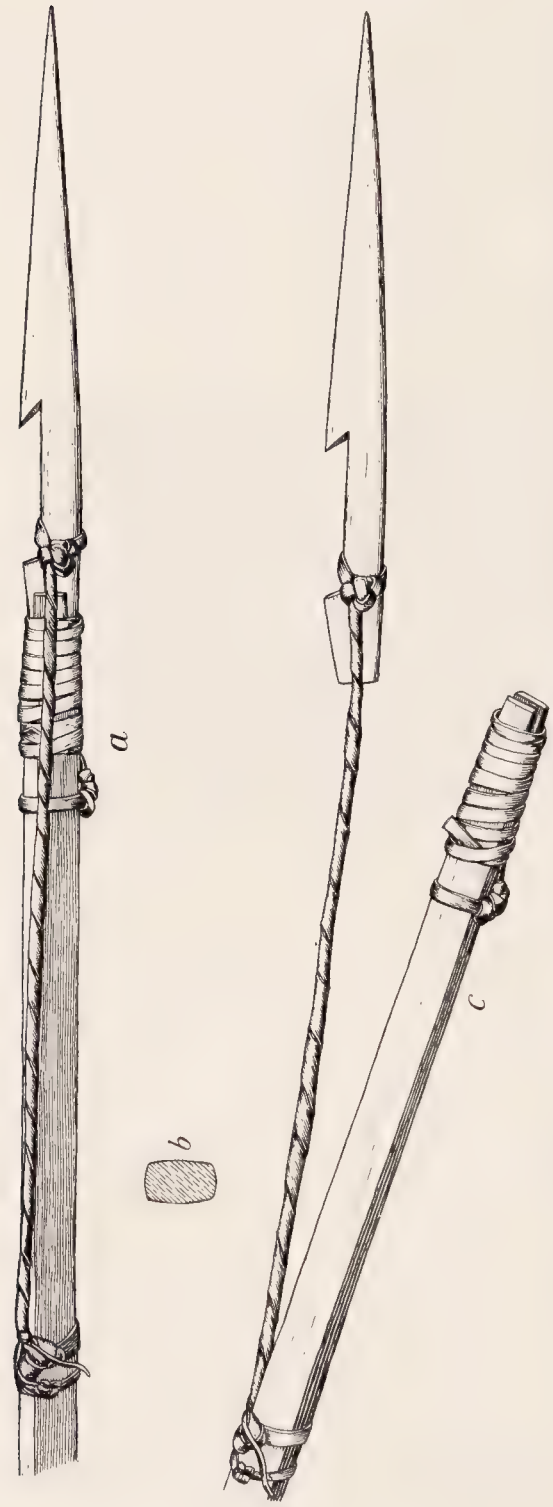


FIG. 82.—Yahgan harpoon. *a*, Assembled for casting; *b*, Section of shaft; *c*, Position when dragging through water. Length of head, 10 in. (14/2271)

discovered in late Paleolithic deposits in Europe, yet between the Yahgan and the Magdalenian peoples of Europe roll great oceans of time and space.

2. HARPOONS.—In the pursuit of seal, porpoise, and whale, the Yahgan employed a harpoon with a heavy shaft and a detachable head joined to the shaft by a thong (fig. 79, *b*).

The shaft differs from the fish-spear shaft in material and in weight: it is heavier than the fish-spear and consequently will deliver a harder blow; it is usually made not of beech but of cypress wood. Cypress grows only along the western channels of Tierra del Fuego, but in the old days the wood passed thence in trade to Beagle channel and the southern islands.

There are regional differences in the kind of point attached to the cypress shaft: in the east a single-

barbed head (*awaía*) was used (fig. 81, *a*); in the west a double-barbed form (fig. 81, *b*) was employed. In both regions, however, the head had a flat-base tang with an expanded foot.

In assembling the weapon, the tang of the spearhead was inserted in a slot which ran completely through the head of the shaft, where it was loosely lashed by an encircling seal-hide thong (*tuwawáru*). It was held in place by a second thong (*tamutú*) tied to the tang and attached to the shaft two or three feet from the head. As illustrated in fig. 82, *a*, this thong was twisted until its length was lessened and it acted as a spring to hold the butt of the tang firmly against the bottom of the slot in the spearhead. The tension of this thong was a matter of constant adjustment, for it varied according to the wetness or dryness of the thong and even with the state of the weather.

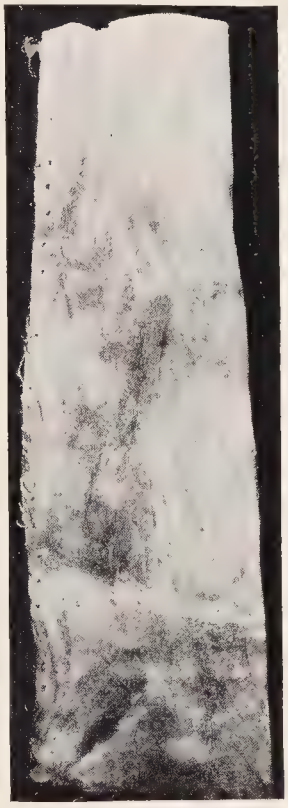


FIG. 83.—Yahgan spearpoint case. Height, 14 in. (14/2370)

When the seal-spear had been buried in the flesh of a porpoise, whale, or seal, the point promptly pulled out of the socket and the shaft then acted as a drag, as shown in fig. 82, *c*. But owing to the fact that the thong from the shaft to the head was tied near one end of the shaft, it dragged at an acute angle, so that sufficient pressure to break the thong or the shaft was not produced. The Yahgan apparently did not employ inflated skins or bladders for this purpose.

3. GUANACO-SPEAR.—In the eastern part of Beagle channel and on Lennox and New islands the Yahgan hunted the guanaco with a special kind of spearpoint (*wunạí*), shown in fig. 81, *c*. It resembles the seal-spear in having a single barb, but lacks the projection seen on the seal-spear's tang. It was lashed on the light hexagonal shaft of a fish-spear. This kind of weapon apparently was in use only among the eastern Yahgan, for it was unknown to Messrs. William Bridges and Fred. Lawrence. The example illustrated was obtained from a Lennox islander. To spear guanaco the animal was chased into a swamp or else the

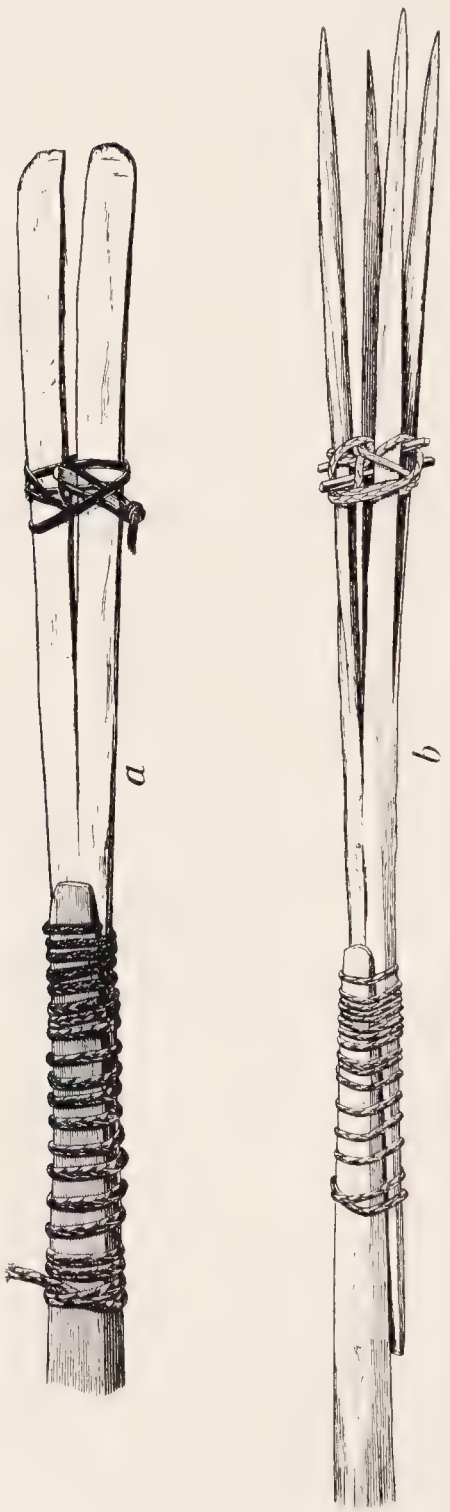


FIG. 84.—Yahgan limpet-spear (*a*) and crab-spear (*b*). Length of heads, 16½ and 19½ in. (14/2271, 2272)

hunter climbed a tree over a guanaco runway in the woods and waited there until an animal passed beneath him.

The three spear types described all had bone points, specialized in type but of approximately the same length. To carry the extra points that might be needed were the one in use to become lost, the Yahgan employed a small case made of seal-hide with the hair side inward. Old-time containers were simply a rectangle of skin folded double and sewn up the side and bottom (fig. 83). In recent years the Yahgan have followed the pattern of the Ona quiver (fig. 33) and have inserted a small oval piece of hide at the bottom of the case.

4. CRAB AND SEA-URCHIN SPEAR.—As shown in fig. 79, *e*, this spear (*akwisimána*) was considerably longer than the other Yahgan spears, for it was designed to secure crabs and sea-urchins under water.

The shaft was not octagonal like the other spears considered, but was round. It was covered with minute flutes like the Ona bow, but they were not so carefully worked.

The head of the crab-spear (*síta*) was a piece of yellow barberry wood split at one

end to form four prongs which were sharpened and hardened in the fire (fig. 84, *b*). These prongs were wedged apart with small wooden toggles held in place by a lashing of either braided grass or whalebone. The head was lashed to the shaft with a seal-hide thong.

5. LIMPET-SPEAR.—The limpet-spear (*kaliáno*) had either the fish or the crab spearshaft. It is seen with the former in fig. 79, *a*. The head (fig. 84, *a*) had but two prongs with flat, chisel-like blades. They were forced slightly apart by a small toggle.

BOW AND ARROW

In the old days, according to all accounts, the Yahgan habitually used the bow and arrow, but during the last half of the nineteenth century this weapon rapidly fell into disuse, until by the end of the century the bow had become a toy for children.

FIG. 85.—Yahgan bone arrowpoint. (After Hyades and Deniker.)

According to Fitzroy (1839, pp. 184, 187) the Yahgan everywhere arrowed birds and, in the east, guanaco. Their bows he described as three or four feet long and "quite plain." The arrows were two feet in length, well polished, and with the points so loosely attached that they remained in the flesh when the shaft was withdrawn (fig. 85).

An example of Yahgan bow which the Rev. John Williams kindly allowed the writer to examine had been given to his children several years ago as a toy. In general type it resembled the Ona bow, like which it was fluted, a characteristic due, I suspect, to contact with the Ona at Harberton. However, it was much shorter than the Ona bow, and much more curved, especially at the ends. This latter feature may have been accidental, for guanaco-sinew has a tendency to shrink for many years, and the writer has noted in museums Ona bows unduly curved owing to the increasing tension of the cord.

The arrows were short, clumsy, and untapered—very crude

indeed compared with Ona workmanship. The arrowhead was of bone, cut to the Ona pattern with two barbs; but it had a long tang and was loosely attached to the shaft with heavy lashings like the Yahgan spears. Notches in the blade of the specimen illustrated (fig. 85) suggest the lithomorphic protype seen in fig. 105, *b*.

In the Peabody Museum at Salem are two old Yahgan bows, one the gift of Capt. B. Morrell, Jr., who obtained it in 1825, the other collected by Lieutenant Wilkes, probably at Orange harbor or Wollaston island. These bows, illustrated in pl. XIII through the kindness of Mr. L. W. Jenkins, are respectively 3 ft. 9½ in. and 4 ft. 1 in. from tip to tip. Though the general outline and cross-section recall the Ona bow, the fluting typical of the handiwork of that tribe is absent. Both specimens appear to be made of beechwood, but this has become dark through age, much handling, and the application of grease. Bowstrings are of guanaco-sinew; they are attached in Ona fashion with a slip-noose at the bottom (to the right in pl. XIII) and with several turns secured by a half-hitch at the top.

CLUBS

Yahgan clubs (*kíwa*) are short stout sticks, painted red when new (fig. 85A). These weapons were intended for killing seal on

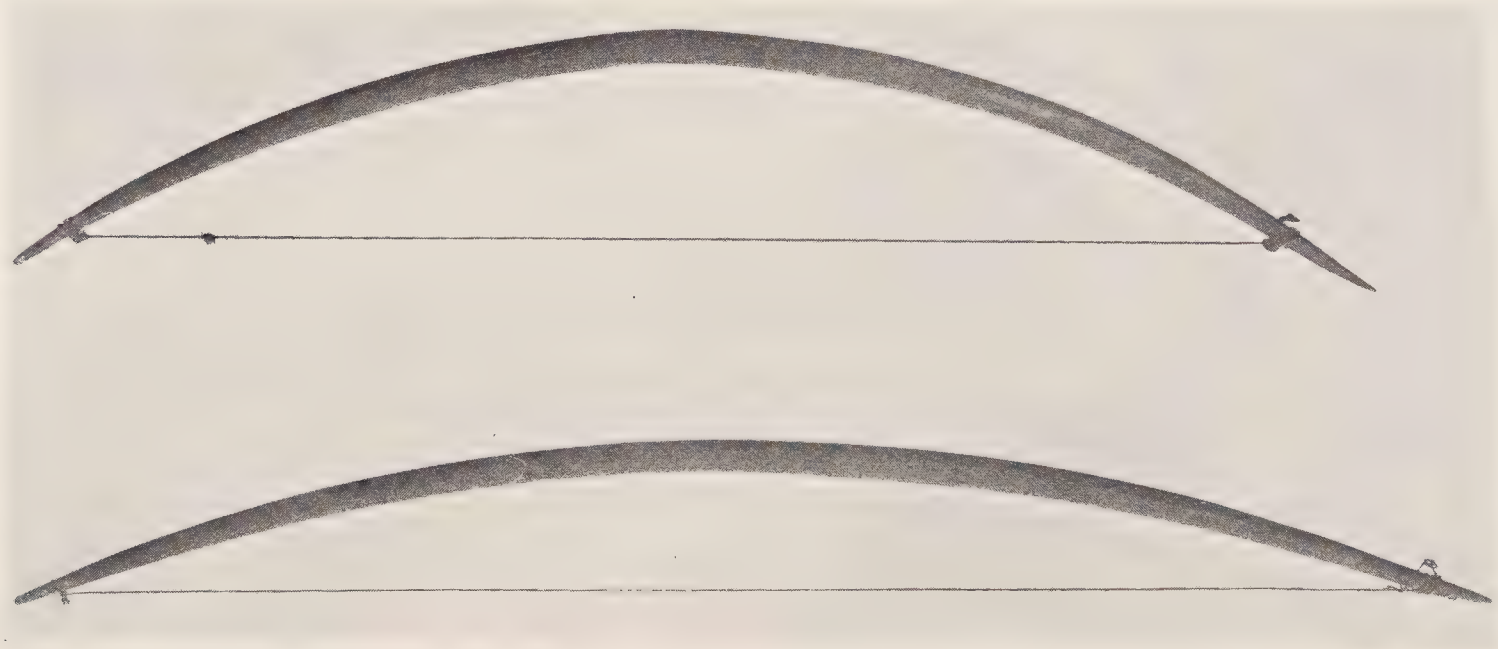
FIG. 85A.—Yahgan club. Length, 47½ in. (14/2271)

shore, or for killing birds at night with the aid of a torch of beech-bark (*aíirshun*). Also they were commonly used in fighting.

SLINGS

Slings (*watewá*) were an extremely effective weapon among the Yahgan, for some are said to have been so dextrous in their use that they often brought down flying birds. The usual sling (fig. 86) has a pouch of guanaco- or seal-hide suspended on braided whale-gut lines. The ends terminate in knots enlarged with a little guanaco wool. In discharging a stone, one knot is placed between the fourth and the little finger with the cord running across the palm of the hand; the other knot is held between the thumb and forefinger as the sling is whirled around the head.

The Alacaluf, as well as the Yahgan, were skilful users of slings, but of the Ona only those in the south had slings. At first glance



ANCIENT YAHGAN BOWS

LENGTH, 3 FT. 9 1/2 IN. AND 4 FT. 1 IN. (COURTESY OF THE PEABODY MUSEUM, SALEM, MASS. (CAT. NOS. 3236, 8955))

it would seem clear that the Ona had acquired knowledge of this weapon from the Yahgan. However, the Ona word for sling (*shínkai*) is not taken from the Yahgan, while slings are mentioned in a supposedly ancient Ona legend. Possibly then the Ona might not have borrowed the sling from their Yahgan neighbors, but in all probability they did.

FIG. 86.—Yahgan sling. Length, 27 in. (14/2351)

BIRD-SNARES

Three different forms of snare were applied to the capture of birds by the Yahgan. In all of these, active prehensile function was performed by a noose of whalebone scraped thin to make it flexible. The simplest procedure was to set such a noose over a bird's nest during its absence. Also a series of nooses might be set on a cord, staked down in an open spot, and covered with suitable bait (fig. 36A). Finally, a whalebone noose was set on the end of a pole (*aúrum*), as illustrated in fig. 87. With this implement it was possible to snare roosting birds during the night.

BIRD-CATCHING BY HAND

In addition to killing birds with arrows, slings, club and torch, and snares, the Yahgan sometimes took birds by a method which, if successful, often resulted in prodigally wasteful and unnecessary slaughter. At night a man would paddle silently to a rock where birds, preferably shags, as they are heavy sleepers, were roosting. He would steal silently ashore, and then seize the nearest bird with one hand around its wings and with the other hand pinch its windpipe so that it could neither flap its wings nor make an outcry. Then he bit off the head, placed the corpse on the ground, and went for the next bird. Thus with luck great numbers might be taken. But the steamboat duck (*Tachyeres cinereus*), a light sleeper, could seldom be captured by this method, and, if any were roosting on the rock selected, they usually gave the alarm. Fitzroy (1839, p. 184) says that the Yahgan dogs were trained to catch birds by stealing upon them as they roosted during the night.

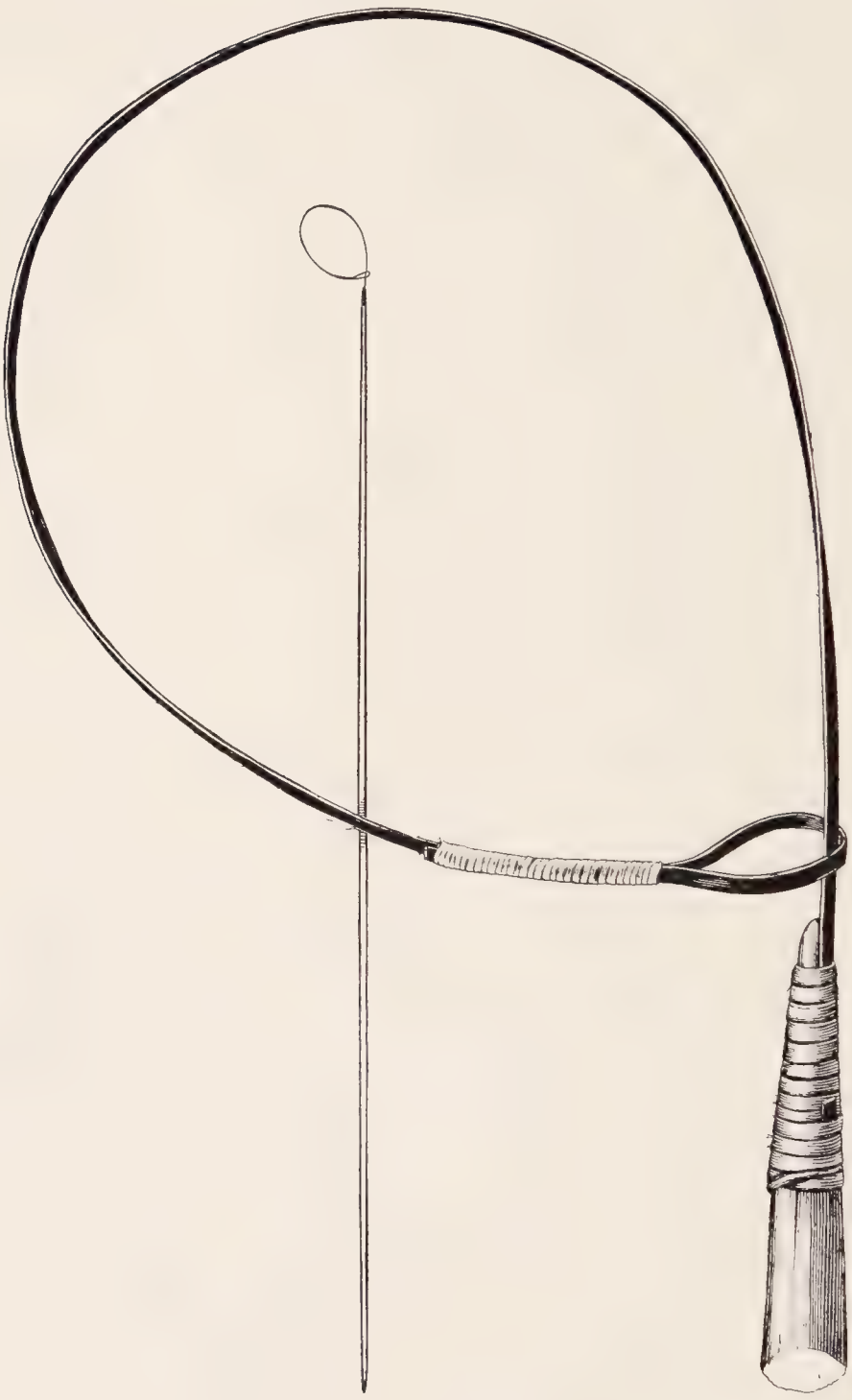


FIG. 87.—Yahgan bird-snare. Diameter of loop, 6½ in. (14/2276)

On Gable island and other places where birds nested the Yahgan captured the young and tamed them to frequent their wigwams until they were large enough to be eaten. The writer has seen young upland geese and gulls thus tamed. Also, in the summer, the Yahgan had special bird hunts near the breeding places, because at this time of year the birds, though nearly full-grown, have not learned to fly and may be captured by running them down.

FISH-LINE

The Yahgan fish-line, shown in fig. 88, consists of three elements: line (*tápim*), sinker (*társhir*), and bait noose (*tukaléna*). The line is of braided whale-sinew and is ten to twelve feet long. The sinker is a small stone with notches knocked in opposite sides. The noose, like the bird nooses, is a narrow strip of whalebone scraped thin and flexible with a bit of shell. In an emergency a piece of kelp was used as a fish-line.

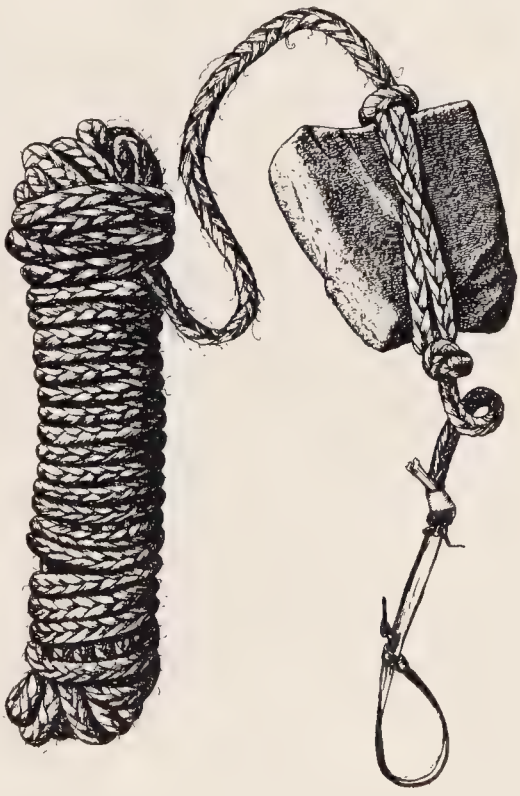


FIG. 88.—Yahgan fish-line. Length of coiled line, 6 in. (14/2375)

In order to fish, the Yahgan women paddled in their canoes to a shallow reef. There they anchored the canoe by inserting the handle of the paddle under a gunwale so that the blade projected outboard on the other side. A heavy piece of kelp was hauled across this, which not only served to prevent the canoe from drifting but also steadied it. Bait was then inserted in the noose and the line was lowered. When a fish had nibbled at and partly swallowed the bait it was pulled to the surface, seized by a quick dart of the hand, and killed by biting it in the head. Fish were cleaned as soon as they were caught by biting a hole in the belly through which the guts could be extracted with the finger.

FISH-NET

At certain seasons of the year Beagle channel is infested by small sardine-like fish which the Yahgan captured in dip-nets (*chiwanúsh*) woven of grass. A rather poorly-made example of these is shown in fig. 89. It will be noted that there is a light wooden frame enclosed by parallel stems of grass tied to the members of the frame. This was lashed to the end of a pole and with it the fish were dipped out. A model of this implement appears in the bow of the canoe in fig. 73.

FIG. 89.—Yahgan dip-net. Height, 12 in. (14/2321)

FISH-WEIRS

According to Hyades (1891, p. 372) the Yahgan sometimes erected in suitable places fish-weirs consisting of a row of stakes. Of these I saw no trace in Tierra del Fuego.

SOCIAL ORGANIZATION

Yahgan society was based on the family. There was no higher unit. However, related families usually paddled their canoes in couples, as the skin housetop was heavy for a single canoe, and they divided the common roof into two parts, of which each carried one. While the Yahgan were rovers, they usually stayed regularly in one district, where most of the people were their relatives.

All observers of the Yahgan comment on their lack of leadership. Medicine-men asserted a certain authority through the fear they inspired, but at times they were roughly handled, so their power was in no wise secure. As no communal enterprises were undertaken, there existed no need for chiefs.

Kinship

The Yahgan kinship terms, like the Ona, were compounded with the possessive adjectives "my," "your," "his," or "her" (*háwa, sína, kichin*). These whole expressions may or may not be contracted. Additional complications were introduced by the fact that different terms in some cases were used when speaking of a person nearby or far away, and again when two people or several people took part in the conversation.

The kinship terms listed below were obtained in part from Mr. Fred. Lawrence and in part from Yahgan at Puerto Mejillones, and have been checked by Mr. William Bridges. It is difficult to gather these words, because much time has passed since many of them were used.[1] We have given many terms only in the first person when the second and third persons are regularly formed.

Table V.—YAHGAN RELATIONSHIP TERMS

Father	
my father	*háwahímun, háwimun*
your father	*sínahímun, sínimun*
his (her) father (when nearby)	*kichinhímun, kichimun*
his (her) father (when afar)	*kúnchiminhímun*
Mother	
my mother (when two speak)	*háwadábe*
my mother (when several speak)	*hídabéyan*
your mother	*sínadábe*
his (her) mother (when nearby)	*kichindábe*
his (her) mother (when afar)	*kidabéan*
Brother	
my elder brother	*háwawaíamun*
your elder brother (when nearby)	*sínawaíamun*
your elder brother (when afar)	*waímhaki*
his elder brother	*kichinwaíamun*
my middle (of 3) brother	*háwayínatápawaíma*
your middle (of 3) brother	*sínayínatápawaíma*
his middle (of 3) brother	*kichinyínatápawaíma*
my younger brother	*háwaashuwá, háwaashuwaíki*
your younger brother	*sínaashuwá, sínaashuwaíki*
his younger brother	*kichinashuwá, kichinashuwaíki*
my brother next to my eldest	*háwawaímakínchigaíakigaíaki*
my brother next to my youngest	*háwaashuwaíakínchigaíaki háwaúshpaki*
my brother next to my second	*háwayénatawaímakínchigaíakigaíaki*

[1] Both Fitzroy and Darwin comment on the extraordinary rapidity with which the Yahgan and Alacaluf taken to England in the *Beagle* forgot how to speak their native tongues.

Sister

my sister	*háwamukúskípan*
my elder sister	*háwawaíkípan*
my younger sister	*háwaáshkípan*
my sister next to the oldest	*háwawaíkipánchigaíakigaíaki*
my sister next to the youngest	*háwayénatapawaíkipan*

Uncle

my father's elder brother	*háwahimúnchiwaíamun*
my father's younger brother	*háwahimúnchiashuwá*
my mother's elder brother	*háwadabeínchiwaíamun*
my mother's younger brother	*háwadabeínchiashuwá*
my paternal uncle	*háwaĭ'man*

Aunt

my mother's elder sister	*háwadabínchiwaíakípan*
my mother's younger sister	*háwadabínchiáshkípan*
my maternal aunt	*háwayĕhadábe*
my paternal aunt	*háwatemapúa*

Grandfather

my mother's father	*háwakolúna*

Wife

my wife	*háwakuloána*

Son

my son	*háwamákun*

Daughter

my daughter	*háwamakípan*

Grandson

my grandson	*háwamágutsa*

Cousin

my father's sister's son	*háwawáturu*
my father's sister's daughter	*háwakipawáturu*
my brothers and cousins (in general)	*háwamákusyérmalin*
my sisters and cousins (in general)	*háwamákuskípayérmalin*

Family

my family	*háwamamakuísawála*

Marriage

The Yahgan addressed cousins of the first and second degree as "brother" or "sister," and were not allowed to marry within that range of consanguinity. A man spoke of his female relatives with whom marriage was forbidden as *háwamákuskípayérmalin;* a woman's prohibited relatives she named collectively *háwamákusyérmalin.* The restriction was absolute.

Among the Yahgan, marriage by capture seems to have been less common than among the Ona. A woman given in marriage by her father against her will soon abandoned the undesired husband. In fact the Yahgan showed a tendency to change husbands and wives not infrequently, which we may term progressive polygamy. According to Rev. Thomas Bridges (1884, p. 206) a man might have from one to four wives at a time, but the number was not fixed by custom.

Infidelity resulted in no fixed form of punishment, but both the offending man and woman were apt to be beaten. Shortly before our arrival a Yahgan man had disappeared. It was rumored that his wife, enraged at his amours, had beaten him with a paddle and accidentally killed him.

Children

In the old days, to judge by the number of deserted orphans set down in the mission records, the Yahgan did not greatly devote themselves to the care of the children. Abortion seems to have been a common practice, and infanticide we judge was not rare. To reach the facts is somewhat difficult because early explorers did not have sufficient knowledge to describe such practices, and the mission contact soon put an end to them or drove them under cover.

Soon after birth had taken place the Yahgan mother bathed in the sea and the new-born child was also immersed in order to toughen it. This was a rather terrible ordeal for an infant, for the sea temperatures of winter and summer range from 40° to 50° Fahrenheit, while the air at best could be described as no warmer than temperate. We have no figures to show what mortality this custom entailed, yet cannot but believe that soon after birth all but the most vigorous and robust infants were thus ruthlessly eliminated.

After delivery, not only the mother but the father as well was expected to rest for a week or more. In this custom we see incipient couvade.

Games and Amusements

The Yahgan to pass the time indulged in various simple games and in singing and dancing. Of necessity the young boys devoted much care and time to practice with spear, bow and arrow, sling, and stones; but while these exercises often assumed the form of

sport, the practical aspect of gaining a livelihood and a desire to imitate the grown men must have been the underlying motive. Wrestling was not uncommon, and was an extremely rough sport, so much so indeed that death sometimes ensued. Rev. Thomas Bridges (1884, p. 179) recognizes two types of wrestling: one between individuals known as *kahleka*, another between two groups known as *ungiana*.

Of the simpler amusements the children had several of the "follow-my-leader" type, they used a swing, they had a simple ball-game like the Ona, and they painted themselves in the style of their elders and inserted short sticks in their lips, nostrils, and eyelids. Games of these kinds have been studied by Koppers (1924).

Of Yahgan songs Mr. Bridges (op. cit., p. 177) recognizes several varieties. The first group, called *loima*, are songs of blood revenge; another type, called *telania*, are songs of mourning; the *arua* songs are peculiar to the medicine-men; finally there are songs called *jacos* which are sung by everybody. This last class are usually mythological in subject matter. The same authority says that the dances are called *uona*. People may dance alone, in couples, or in groups, and in a circle holding hands or in line.

The Yahgan had no foot-racing or water sports of any kind.

Feuds

In general the Yahgan were not an amicable people, according to most accounts. When two groups camped together trouble usually arose, and the weaker group moved away. This as well as the food quest accounts for their frequent changes of residence. Sometimes a fight might start between two individuals and then all their friends and relatives joined, probably in an endeavor to stop the encounter but sometimes to aid their man. Clubs, paddles, spears, slings, and stones were the weapons used. General mêlées, however, can not have been common, for Rev. Thomas Bridges sponsors the statement [1] that in the thirteen years between 1871 and 1884 only twenty-two murders had taken place. I have no figures for the Ona, but killings must have been much more frequent among them than among the Yahgan.

The causes of quarrels among the Yahgan were such as are found among all primitive tribes, namely, insult, theft, adultery, and the

[1] In *South American Missionary Magazine*, London, 1884, p. 224.

death of a relative. All these called for vengeance, but the Yahgan seem to have felt antipathy rather than hatred, so vengeance might be deferred for several years, during which time mutual friends might compose the quarrel.

Blood loyalty was recognized among the Yahgan, but apparently was not fiercely cherished as among the Ona. Rev. Thomas Bridges states that when a murder occurred the friends and relatives of the victim would take revenge, but the family of the murderer abandoned him and made no effort to defend him. This certainly is not customary among primitive people with a highly developed consciousness of consanguinity like the Yahgan, and perhaps Mr. Bridges' statement represents the result of missionary contact rather than the original state of affairs.

Organized warfare, during which any member of one group would kill at sight any member of another group, as among the Ona, was unknown to the Yahgan, but blood revenge was sometimes executed on a relative of a murderer.

Initiation

Thanks to the studies of Gusinde and Koppers full and complete information about the Yahgan initiation rites is available, and the reader desirous of fuller information than is given here is referred to their various publications on this subject listed in the bibliography. Two ceremonies were in use among the Yahgan, known as *shieháus* and *kina*. The first of these, celebrated by both sexes, apparently is the ancient Yahgan rite, while the other corresponds closely to the Ona *klókten* ceremony and represents culture borrowing from that tribe. Both may be described as a systematic educational course for the youth of the tribe—"going to school," the Yahgan called them.

For the *shieháus* ceremony a large domed hut (*mánaga*), elliptical in outline, was erected near the encampment. The framework was of split saplings an inch or two in diameter, bent and set up to form arch-like ribs, and secured in place by a few horizontal beams (pl. xiv). These timbers were held together by lashings of gut. At either end of the hut were doors, one large to admit spectators, one small for the use of the candidates. On the roof they piled branches of the evergreen antarctic beech to afford shelter to those within, but the sides were left open to the weather. Rows of logs staked in place on the floor divided it into a central gangway

flanked by benches, built up by branches covered with skins. In the middle of the gangway burned a fire.

The house we have described was the type used by the central and western Yahgan. Our illustrations show the lodge erected in

FIG. 90.—*a*, Eastern Yahgan initiate's headband and scratching-stick (14/2361); length of stick, 5 in. *b*, Kelp-goose down headband (14/2344); length, 19 in.

1922 at the instance of Gusinde and Koppers on Navarin island. The eastern Yahgan, I was informed, did not use a domed hut for this rite, but a pointed conical wigwam like that seen among the Ona (fig. 38).

YAHGAN CEREMONIAL LODGE, PUERTO MEJILLONES, NAVARIN ISLAND

To beautify the initiation lodge, the flat inner surface of the split saplings constituting the framework was painted with red, white, and black paint. Broad boards, inserted at regular intervals in the frame, as may be seen in the upper view in pl. XIV, received similar decoration. The nature of the embellishment is shown in pl. IX, a series of designs copied from the lodge we have described. When a ceremony was in progress the hut was further adorned with small painted tablets hung from the roof, while an additional touch of color came from painted wands (fig. 91) which often were wedged in the frame of the house when not in use.

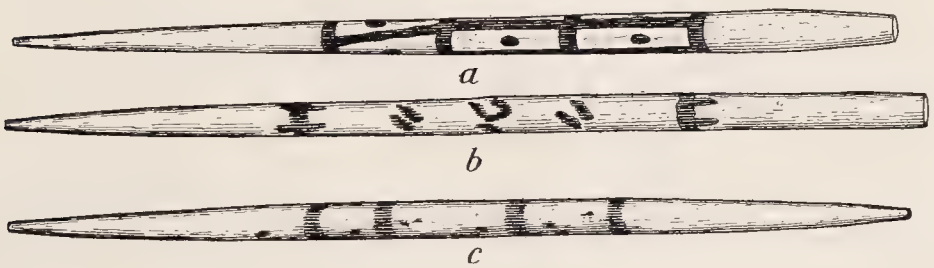


FIG. 91.—Yahgan painted ceremonial wands. Length of *b*, 24 in. (14/2227½)

Two hundred feet or so from the initiation lodge a second and smaller hut was erected to serve as a cook-house where meals for the candidates and officials were prepared.

The paraphernalia used during the ceremony we illustrate in pl. XV and figs. 90 and 91. It consists of heron-plume headbands (*hapawára*) worn by the officials, kelp-goose down headbands (*paqal*) worn by the others present, a narrow hide headband painted white (*hehel*) worn by the initiate during part of the ceremony, a small stick also painted white (*w'matámia*) used for scratching, and variously painted wands (*tumoistáka*). The scratching-stick is assigned to all the Yahgan by Koppers (1925), but I was told that it was used only by the easterners. The wands were held in the hand during the singing and dancing, and were swung in time with the music. When not in use they were thrust upright in the ground or stuck in the frame of the lodge. If one fell on the ground it was considered an evil omen. I was told that these wands were not in use among the easterners. The men in charge of the ceremony kept at hand a seal-hide thong like that pictured in fig. 76, but adorned with closely spaced red dots; it was used to tie up any candidate who became unruly.

The oldest and most experienced of the men present assembled before the ceremony and agreed on the time and manner in which it was to be conducted. From their number they chose one who was both respected and well liked to be the master of ceremonies. Another they selected as the official instructor of the candidates, while others they designated "policemen." Their duties were to assemble the candidates in the lodge—by force if necessary—to see that they were submissive at all times, to sit on the roof during the ceremony and ward off any threat from without, and to communicate with the cook-house when necessary. Finally each candidate had three godparents, two of his own and one of the opposite sex. Their part was to see that the candidates fulfilled all the ritual properly and to help them as much as possible, for it was to the credit of the godparents if their adopted children did well. In addition to the candidates and the officials, most of the grown people came to celebrate the ceremony. Places were taken in family groups, while the initiates sat with their godparents. All sat with their legs crossed under them and with arms akimbo, thereby taking up as little room as possible so that a large number might receive the warmth of the central fire.

For the first three days of the initiation, candidates maintained a strict fast, for their allowance of food was only from three to five mussels a day. Their water supply also was limited and had to be consumed through a hollow bird-bone. At night they were forced to maintain their cross-legged position, with the exception of four to six hours when they were allowed to sleep. If they relaxed at any other time they were pushed back into position by the older people and perhaps beaten for their lapse.

During the day the initiates received instruction in the art of making a living. The men instructed the boys in the methods of hunting, how to make tools and weapons, how to build canoes and houses, etc. Similarly the women taught the girls how to gather mussels and fungi, how to make baskets, buckets, and necklaces, how to rear children, etc.

At nightfall all the candidates were taken to the beach and forced to bathe in the icy water of the ocean. After the first bath the boys received a sort of tattooing on their chests, consisting of three lines of scratches into which they rubbed red paint. This was not real tattooing, because the cuts were not deep enough to retain the color permanently.

YAHGAN HERON-PLUME HEADBANDS

HEIGHT OF *a*, 7 IN. (14/2336, 2337)

The greater part of the *shieháus* ceremony was filled with singing and dancing. By means of song they sought both to communicate with and to keep at a distance the *Yetaite*, a great evil spirit, who, the candidates were told, might seriously injure the occupants of the initiation lodge. Dancing served to neutralize the evil of his presence. To frighten him, the walls of the hut were beaten with sticks. Candidates were told to follow directions exactly or the *Yetaite* would seize them. Sometimes the *Yetaite* actually appeared —a man fantastically painted. Finally the candidates were told who it was and were warned that the real *Yetaite* was much worse than what they had seen.

The master of ceremonies usually was the leader in the singing, though sometimes this duty was assigned to another old man. The dances, which usually came late at night, were named for certain animals. Both the melody and the movements suggested characteristic peculiarities of this animal.

The moral instruction of the candidates they divided between the godparents and the official teacher, at whose feet the initiates had to sit from time to time. They were taught to be altruistic in thought and conduct, and to exhibit the virtues of hospitality and generosity. Respect for the aged was inculcated, for all must grow old in time. The boys they taught to be peaceful and not to make enemies, to treat women with respect, to help the young and the blind. The girls they told to rise early in the morning to get their water and wood, to care faithfully for their husbands and children, not to fuss about trifles, nor to repeat gossip. Behind these instructions stood a certain amount of religious sanction, for the evil *Yetaite* threatened them, while the supreme *Watauinewa* observed their every action. This moral code set a standard for the tribe to which in practice they did not adhere too rigidly.

After some days of instruction the ceremony came to a close. At a given hour the candidates assembled behind a curtain at one end of the hut. One by one they were called forth with the master of ceremonies dancing beside them and were ceremonially surrendered to their godparents and therewith accepted as members of the tribe. The godfather gave his child three gifts: a finely woven *gaiíchim* basket adorned with feathers, a bird-bone like the one used to drink with, and a scratching-stick.

In the final hours of the last evening the women took charge under the leadership of an old woman. She and the other women

sang, seated in the central part of the lodge. Finally a mock battle between the sexes was staged.

Such then was the *shieháus* ceremony. On it the Yahgan believed their well-being depended, and without it no one could have any standing in the community. In fact each individual repeated the performance two or more times, but received preferential treatment after the first course.

a *b*

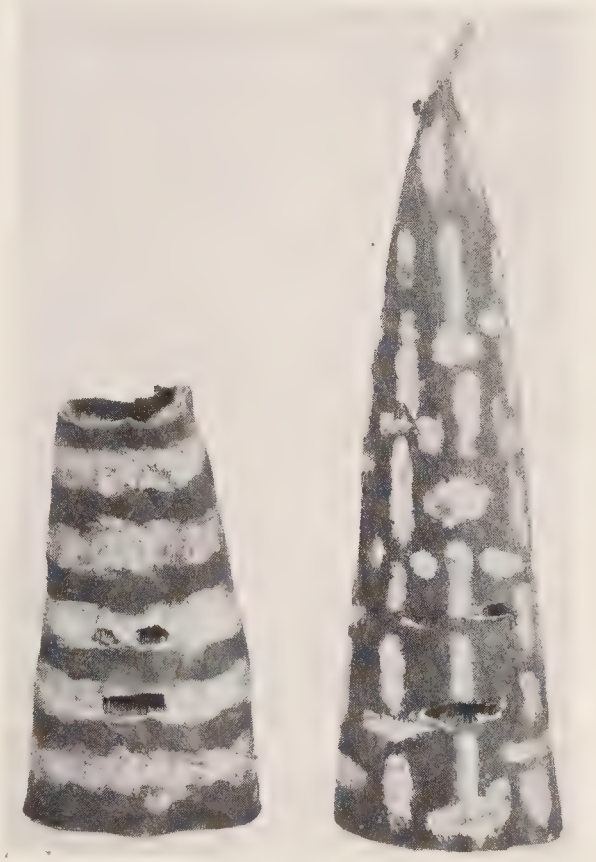
FIG. 92.—Yahgan dance masks. Height of *a*, 27 in. (14/2259, 2258)

After having experienced the *shieháus*, Yahgan men were allowed to enter the *kina* ceremony. This rite resembled the Ona *klókten*. Gusinde and Koppers believe that it originated among the Ona, pointing out that inequality of the sexes was foreign to Yahgan precept and that it was not taken so seriously by the Yahgan as the Ona. Rev. Thomas Bridges speaks of the ribald laughter among the Yahgan women when a mask fell off a supposed spirit, thus revealing his human character.

This ceremony fell into disuse among the Yahgan as early as the eighties of the last century; but it was revived in 1922 for the benefit of Gusinde and Koppers, to whose accounts of it the reader is referred. While differing in details, it was essentially like the Ona rite except that the treatment of the candidates neither lasted so long nor was so severe as among the Foot Indians.

In figs. 92 and 93 are illustrated some of the masks used by the Yahgan. The material is either bark (fig. 92) or seal-hide (fig. 93), cut to pattern and sewed together with whalebone and gut respectively. There is usually a small opening at the top for ventilation. As Yahgan paints were not waterproof, a single mask could be adorned to represent many characters by the simple expedient of washing and repainting it.

As to the characters represented by the Yahgan, in fig. 92, *a*, is the rainbow, distinguished by broad red, white, and black bands; *b* has alternate red and white stripes, and it represents a smelt-like fish. In fig. 93, *a*, is a model of the *kalapasha* ghost mask, while *b* represents the sea-hen. The wearers of these masks painted their bodies and limbs with similar decorative patterns.



a *b*

FIG. 93.—Model Yahgan dance masks. Height of *b*, 10 in. (14/2362)

RELIGION

Although it has been repeatedly stated on excellent authority that the Yahgan had no real religion, I think it definitely established that they had religious beliefs and practices.

The Yahgan world was peopled by innumerable unseen beings: ghosts (*kushpig*) of departed shamans, spirits of the sea, the rocks, and the trees. These people, for the greater part, were malicious by nature, resentful of intrusion on their privacy, and, when seen by man, terrifying in aspect. Solitary travelers might suddenly find themselves facing a fierce spirit across the light of his camp-fire,

and might be seized and done to death. However, the shaman usually had power over demons of this type and could give protection.

Apart from and above these lesser spirits was the great *Watauinewa*, described by Koppers (1925). This supreme being, though not concerned with creation, was the master of all. He sent the great flood in days long past, he causes death, he controls the game and fish supply, he is perfect and almighty. To him prayers were offered in sickness, grief, and thanksgiving, for this was not an aloof god normally forgetful of the affairs of mankind. Rather he was a supreme dispenser of justice, and he always punished the wicked.

The Shaman

Among the Yahgan both medicine-men and medicine-women existed and played an important part in the community. Supernatural powers were attained by certain individuals thought to have command over a natural spirit and the ghosts of departed witch-doctors. Thus dowered they could either kill or cure the individual and could affect the well-being of the community by controlling the weather or the food supply.

Disease, as among many primitive folk, they accredited to causes no less concrete than wounds. Hence the shaman must work his cure by removing some foreign object lodged in the body of the patient through accident or malice. Usually the doctor, after much massage, manipulation, and incantation, would triumphantly produce a stone or some other object, which he claimed to have extracted from the sufferer. The cures actually wrought can be attributed to the often beneficial results of the massage and to the healing power of suggestion.

According to Koppers (1925), the shaman assumed his function as the result of a "call" coming to either a man or a woman. This inner vocation took the form of a dream in which friendly relations were established with natural spirits and with the ghosts of dead shamans. After several such dreams a personal guardian spirit would be established. To the men a sort of shaman's school was open, but women were barred from this because they had not passed the men's final initiation. During the period of this school dreams were encouraged by rigorous training, much practice was given in the necessary sleight-of-hand tricks, and the proper chants were memorized. The curious spectacle of a man walking on hot

coals witnessed by Rev. Thomas Bridges (1893, p. 238) may have been part of this training.

Graduation from the shaman school did not insure a successful professional career, for only by repeated proofs of power could the individual's reputation be established. It seems that there was much competition among the medicine-men, and several early observers note a tendency of almost all the older people to work cures, to prophesy, etc.

FIG. 94.—Yahgan shaman's bag. Diameter, 11 in. (14/2337)

In fig. 94 is illustrated the guanaco-hide bag in which the shaman carried his impedimenta. The contents were diadems of heron-plumes and of kelp-goose down, and white paint To these doubtless should be added a number of small hard objects to be shown to the sick as the cause of their pain.

DEATH

When death took place the corpse was wrapped in old seal-skins and buried outside of the house within twenty-four hours. If the ground were frozen, the corpse might be covered with stones and shrubs to keep off dogs and foxes, or it might be buried in a cave or on a small island. Hyades (1891, p. 379) says that when death occurred far from home the body was carried into the woods and cremated. This was done that the bones might not fall into the hands of enemies and be made into harpoon-points.

For mourning the family of the defunct covered themselves with

black paint and indulged in formal ululation. They summoned their friends and relatives to the death-dance known as *yamalashe-moina*, which might be repeated at intervals for several months. For it the men and women donned the white kelp-goose headband; the men supplied themselves with clubs of unusual length (fig. 95),

FIG. 95.—Yahgan ceremonial club. Length, 5 ft. (14/2261)

and the women carried paddles. As with many primitive tribes, the Yahgan believed death due to some positive and active force, visible or invisible. Hence the mourning ceremony carried the threat of revenge and assumed the character of a sham battle.

It has been both asserted and denied that the Yahgan believed in the immortality of the soul. Testimony on this point secured in recent years from mission-reared Indians might not be considered conclusive, but mythological tales clearly indicate belief in survival. As among the Ona, only unusually powerful and bold spirits, such as those of shamans, were able to maintain contact with the visible world.

MYTHOLOGY

The Yahgan possessed the usual collection of myths found among primitive peoples, but these are exceedingly simple in character and lacking in humor or sublety. The most extensive study of the mythology of this tribe was conducted by Gusinde and Koppers, and has been published only in outline. Barclay, Thomas Bridges, Cojazzi, and Martial also have contributed mythological material of importance, while a few scattered tales occur in the works of other writers. It has seemed worth while to summarize these published sources because they often are difficult to obtain and have appeared in five different languages. We have followed the classification of Koppers (1924).

EXPLANATORY MYTHS

There are a large number of tales which explain the various phenomena of nature such as the slow approach of dawn, the shape of the rainbow, the spots on the moon, the bare tops of the mountains, etc. Such tales often form incidents in the more complex myth cycles we shall discuss.

ETHICAL MYTHS

In this class are various stories dealing with adultery and incest. The wrongdoer is invariably punished and usually dies in disgrace. These stories are told the young during the initiation ceremonies as part of their education.

GHOST STORIES

Ghosts (*kushpig*), especially of dead shamans, were greatly feared among the Yahgan, as they were thought at times to intervene maliciously in human affairs. Hence tales exist of close escapes or death at their hands. We should also mention tales of men who had gone mad from some cause. Living in savage solitude, they sometimes terrified the Yahgan by appearing before them or attacking with desperate fury.

"ONCE-UPON-A-TIME" STORIES

There are many stories of varied character dealing with the escapades of unnamed individuals. Quite often these tales merge in classification with transformation myths. As an example we quote the following story recorded by Cojazzi (1914, p. 32):

"A young girl was playing on the beach, following the retreating waves. A seal saw her and swam in on a big wave which caught and spilled her. He swam off with her on his back to an island where they lived two years. The seal learned Yahgan. They had a son like a man in shape but covered with seal-hide. One day the woman said she would like to visit her family, and the seal agreed; so he loaded the mother and son on his back and swam to the beach, where he waited while the girl visited her parents, who failed to recognize her. But finally they received her with joy and commenced to prepare a feast. And the men, seeing a seal on the beach, ran down and killed it, and they cooked it for the feast and gave it to the mother and son to eat. Then the son said to his mother, 'Isn't seal meat good?' The mother had a horrid presentiment and ran to the beach where she had left her husband and encountered the traces of blood. Furiously she beat her child over the head, and he fell in the sea and became the fish called *sciuno*."

GIANT STORIES

To the Yahgan the giants (*hanush*) were large and fearsome creatures with hairy skin, flowing locks, and ferocious natures.

Their appearance could not be foretold, with the exception of a few who in ancient times set up as highwaymen on traveled thoroughfares. In general, however, they confined their attention to solitary travelers or to women and children who strayed from the encampment. Martial (p. 213) and Dabbene (p. 66) record the story of a giant shaped like a huge sea-lion, who lived in a cave on Gable island and killed and ate the crews of passing canoes. A young man named Oumoara, small in stature but dextrous with his weapons and courageous in conflict, decided to kill this giant. So he said good bye to his wives and set off alone in a canoe. As he drew near shore he put out the giant's eyes with two successive sling shots; then he poured all his arrows into the giant's body and finished him off with the harpoon.

Once, as the result of the amours of a woman and a block of stone, there was born a giant, who, like Achilles, was vulnerable only in the heel. He lived on the coast of Hoste island where he killed the men and carried off the women. One day he hurt himself in the heel by accident. Oumoara heard of this, and, knowing his weakness, decided to attack him. Thus the giant was slain.

CULTURE-BEARER MYTHS

Koppers (1924) outlines a complex story dealing with two brothers called Yoā'lox and their sister Yoā'loxtörnikipa. According to Yahgan tradition these three were culture-bearers who introduced the use of fire, the art of killing birds, hunting sea-lion, getting fish-oil, making spears with barbs. They were said to have come from the east by land. Taken in conjunction with the Ona legend of bearded white men, I think it is clear that in Tierra del Fuego we have an outlying trace of the Quetzalcoatl-Viracocha myth complex, most highly developed in Mexico, Colombia, and Peru. In the art of more developed cultures than the Fuegian, this hero is associated with the plumed serpent or dragon complex which is the most basic and wide-spread of compound symbolic patterns found among the American Indians, for it can be traced from southern Canada to northern Argentina.

The Yahgan version is that the older Yoā'lox was stupid and lazy, and he wished that the fire would never go out, that the spear would return of itself to the hand after the cast, that seawater should be fish-oil, that man should not die. The younger brother, active and intelligent, said that the unguarded fire should

go out, that the carefully cast spear hits the mark and need not return to the hand, that fish-oil tastes better if one works for it, that it is better to die as one lives again elsewhere. In this the sister, the cleverest of the three, sided with the younger brother.

On arrival in the Yahgan country, the various arts and industries were introduced. There followed a general giving of names, the beginning of sexual intercourse, rules governing menstruation, etc. The two brothers and their sister are now stars in the sky.

DEBACLE MYTHS

In this myth cycle belong the story of the origin of the initiation ceremonies, and a flood myth. According to Koppers, it is told as follows:

Long ago the women ruled the men, who then performed all the duties today allotted to the women. The weaker sex had gained their power by the *kina* ceremony. Painted fantastically and disguised by masks, they terrified into subjection their men folk, who believed they were looking at supernatural spirits controlled by their wives. At that time Hanuxa, the moon, was the leader of the women and chief oppressor of the men.

Löm, the sun, was the ablest hunter and bravest of the men. One day, as he was returning from a successful hunt, he hid behind some bushes and listened to the talk of two girls who were bathing, and from them he learned the whole *kina* secret: there were no ghosts or spirits, only the women themselves. Then a great rage seized Löm, and with other men whom he quickly aroused he rushed into the *kina* hut and killed all the grown women, so that only young and ignorant girls remained living. Since that day the *kina* ceremony has been celebrated by and for the benefit of the men, who thus keep the women in subjection. According to Martial (p. 213), this event transpired near Ushuaia at a time when the Ona were encamped there, so that the two tribes uprooted their social systems together.

Hanuxa, the leader of the women, escaped the general massacre, but she was badly beaten and immediately went to the sky where she became the moon, and today the result of her beating shows in the spots on her face. Discomfited and angry at what had transpired she planned revenge, and so she sent a great flood which covered all the earth except a few mountain-peaks where some people managed to survive.

Later Löm took to the heavens and became the sun; his father, Taruwa Löm, became a star (Venus?); his brother, Akainix, became the rainbow.

Several variants of the flood myth have been recorded in Yahgan-land. Koppers himself speaks of another version in which Laxu-wakipa, the ibex, in rage once sent a great cold spell so that vast quantities of snow fell. Later this all melted and a destructive flood followed. Cojazzi (1914, p. 31) records that among the central and eastern Yahgan they say the moon once fell in the sea. Hence the waters rose above everything but the loftiest mountain-peaks, where a few men and women took refuge with the animals. When the moon climbed back into the sky, the survivors descended and feasted on a dead whale that they found. Another version given by Cojazzi (*loc. cit.*) is that at the time of the flood Gable island became loose at the bottom and floated like a great ship, on which many were saved. According to Rev. Thomas Bridges (1884, p. 18) it was not the moon but the sun who fell in the sea and caused the flood.

THE ALACALUF

Of the Alacaluf, the second tribe of Canoe Indians found on Fuegian shores, only two members were seen by the writer. We therefore have no contribution to make on the Alacaluf. In general Alacaluf material culture was almost identical with that of the western Yahgan. They were, however, slightly better workmen than the Yahgan, so that at times their manufactures can be distinguished from those of their neighbors by the superior finish. For a useful summary of Alacaluf literature the reader is referred to Dr. Cooper's Bibliography.

ARCHEOLOGY OF SOUTHERN TIERRA DEL FUEGO

Camp-sites

The shores of Beagle channel are dotted with the refuse of former Yahgan camp-sites. Composed of ash, bone, stone, and shell, and partly denuded of vegetation, these middens can be recognized from afar by their peculiar pearl-gray color, which differs from the green-gray rock and the brown-gray soil. They are found in sheltered places, where there is a beach for landing, kelp off-shore for mooring canoes, and where water and firewood are readily available.

Examination of the surfaces of the middens reveals on top a series of pits which represent house-sites (fig. 103). These pits are from ten to fifteen feet in diameter, anywhere up to six feet deep (two feet being an average figure), and are circular in outline. Within the pits are traces of inhabitation—hammers, grease stones, etc.—usually today half engulfed by grass. Sometimes house-sites can be determined by small circular patches of unusually luxuriant grass fertilized by refuse, where various utensils can be found.

Like the Ona, the Yahgan did not speak of the dead or camp on a spot where death was known to have occurred. So certain house-pits on any given site must at times have remained unoccupied during many decades until the memory of one who died there had passed. The other pits were occupied but intermittently by the ever-roving Yahgan. Rarely did they pass even a few weeks at any given spot. This factor makes difficult any attempt to estimate the age of these great shellheaps by calculating their cubic contents in relation to the probable number of inhabitants.

The seaward slopes of the middens are fronting the beach and stand so close to the waters that they are occasionally dashed with spray, and many are undercut by the waves for a foot or two at the base (pl. XVI). From this, slight submergence of the land since the heaps were commenced may be argued. As the shellheaps are really great terraces built out from rising ground toward the beach, the seaward slopes are steep. This steepness is increased by the undercutting of the waves, which often cause small landslides. Thus the vegetation is removed and large sections of refuse are exposed for examination as well as if trenches had been dug. At the same time the shells, bone, and ash brought down to the beach by erosion are carried away by the sea, but the heavier stone implements are left at the base of the exposed face where they may be readily gathered.

An interior feature frequently exposed by erosion is that the shells have in places solidified into a breccia, which forms a floor a foot or so in thickness. These spots occur sporadically and at no uniform depth, and it was impossible to determine the special conditions which had given rise to them.

It must be remembered that, as the Yahgan had no cooking-vessels, many of the shells in the refuse have been exposed to the action of fire and hence are calcined. From this it follows that they are very brittle and have been crushed by passing feet when

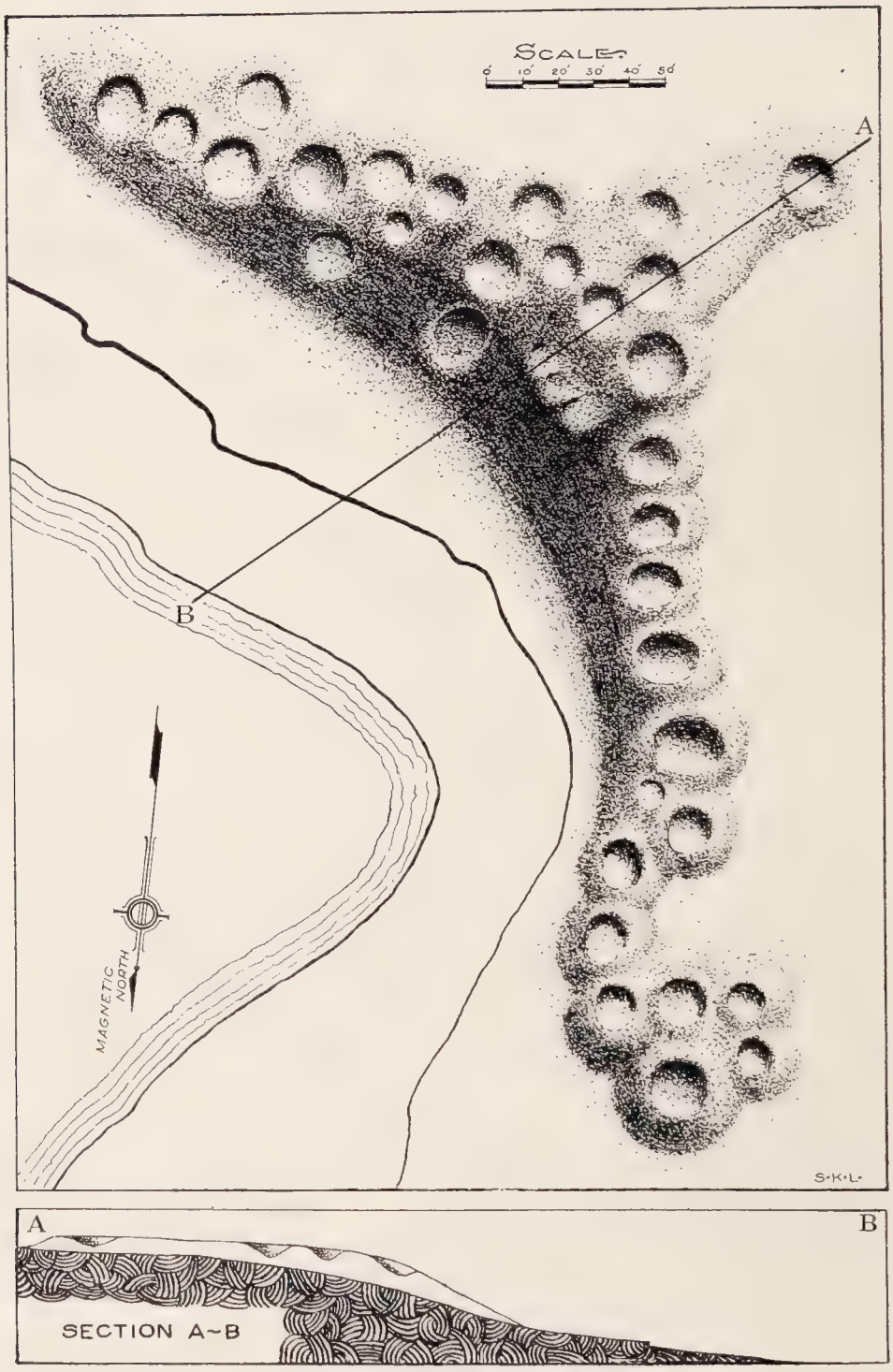


FIG. 96.—Wápisatumánakulum shellheap, Harberton, Tierra del Fuego.

UKAIKAWAIA

POMEGASHAKA ISLAND

GABLE ISLAND SHELLHEAPS

they were on the surface and perhaps again centuries later by the weight of the superposed débris. Any theory that the rotting of shells is due solely to age would therefore seem to be untenable.

As a typical example of a Beagle Channel shellheap we shall describe a site (No. 2 in fig. 98) at Harberton. The Yahgan called it *Wápisatumánakulum*, meaning "the dead whale floated away," in reference to a long past yet tragic alimentary loss. A plan of this midden we show in fig. 96, while a photograph of the southern arm appears in fig. 97. As is usually the case, it stands just above the beach, here composed of shingle on which many shellfish can be picked up. The site fronts on a small cove facing eastward and thus is protected from the prevailing westerly winds and storms. The land has been cleared, but formerly the peninsula was forest-covered and supplied abundant firewood. There is now no water

FIG. 97.—Wápisatumánakulum shellheap, Harberton, Tierra del Fuego.

supply nearby, but there may have been a spring on the peninsula which has dried up since the trees were cut down.

The thirty-odd house-sites pitting the upper surface of the shellheap face the cove in an irregular line. They vary greatly in size, for it seems that some of them have been abandoned for many years and partly filled in. The southern arm of the midden appears to have been longest inhabited, because additional house-pits in front of the original line were placed in the rubbish as it was built out toward the sea. In some of the larger shellheaps as many as four or five rows of house-pits can be distinguished.

FIG. 98.—Camp-sites and place-names near Harberton, Tierra del Fuego.

Excavation of a test pit (just behind the bushes at the right edge of fig. 97) yielded the following results:

1. The interior shells were found to be as solid as those on the surface.
2. Finely powdered wood-ash had not been washed away, although the drainage was good.
3. At a depth of a little more than a foot appeared a type of mussel-shell which could not be found on the beach locally. To this too great significance should not be attached, as it is well known that shell-fish types migrate rapidly. Near San Julian in Patagonia the writer also found giant oyster-shells of a type not known locally.
4. Animal bones are common. At the bottom, long-bones, although wet and very cold (the frost often does not leave the ground till after Christmas), were as strong and sound as if only a year or two old. Vertebræ, ribs, scapulæ, etc., on the other hand, were usually badly rotted and often crumbled at a touch.
5. No distinction between stone objects on the surface and in the interior of the mounds could be detected.
6. The shellheaps throw little light on the culture or antecedents of the Yahgan except for two points:

   a. It seems that no other people except the Yahgan ever occupied southern Fuegia.

   b. It seems that the Yahgan have lived there for a very long time.

On several sections of the coast of Beagle channel a careful examination of the shellheaps was made, because, while an individual mound might give no clue to the density and antiquity of the migratory population in pre-European times, it seemed that a group of mounds might do so. The districts thus studied were: (1) the adjacent Varela, Cambaceres, Imiwaia, Harberton, and Thouctof bays; (2) the channels between Gable island and Tierra Mayor; (3) Puerto Mejillones and the vicinity on Navarin; (4) Róbalo bay on Navarin island. Other localities on Beagle channel or on the islands down to the Horn might equally well have been selected, but the above-mentioned places were convenient and accessible. The location of each shellheap was carefully plotted and an accurate count of the hut-pits made at each site. These counts usually were made by two observers independently to insure their correctness.

Turning now to fig. 98, a map is shown which locates fifty-two shellheaps. In an air-line this map extends from east to west a little more than three miles, but the ever-curving shoreline covers

approximately sixteen miles. Fresh water flows into all of these bays and is found in a pond on Cambaceres peninsula behind middens 29, 30, and 31; small springs are encountered in several places. Firewood is obtainable anywhere except on the marshes flanking the Varela river. Shellfish abound everywhere except in the upper part of Imiwaia bay. Excellent shelter in case of storms is amply provided, and, except in the roughest weather, it is possible to round the various peninsulas in a canoe owing to the heavy bands of kelp that encompass them off-shore. It is an ideal region for a people materially equipped to face life as were the Yahgan.

The number of house-pits counted—1215—indicates that the Yahgan fully appreciated the advantages of the district. The size of each individual camp-site is shown in the following table:

TABLE VI.—YAHGAN CAMP-SITES AND HUTS NEAR HARBERTON

CAMP-SITE	NUMBER OF HUTS	CAMP-SITE	NUMBER OF HUTS
1	12	27	16+
2	35+	28	22+
3	2	29	26
4	40+	30	75
5	50+	31	114+
6	12	32	5
7	31	33	8+
8	8	34	14
9	2	35	22+
10	43	36	6
11	50+	37	5
12	5	38	5
13	43	39	10+
14	7	40	11
15	25	41	25+
16	18	42	9
17	67	43	14
18	15	44	28
19	2	45	27
20	10	46	6
21	9	47	13
22	130+	48	13
23	13	49	4
24	15	50	25+
25	21	51	8
26	35+	52	4
		Total	1215+
		Average	23+

SHELLHEAP 25, VARELA BAY AND NAVARIN ISLAND

LANÁSHWAÍA SHELLHEAP, CAMBACERES BAY AND PICTON ISLAND

SHELLHEAPS

FIG. 99.—Approximate cross-section of shellheap 17, Imiwaia bay, Tierra del Fuego.

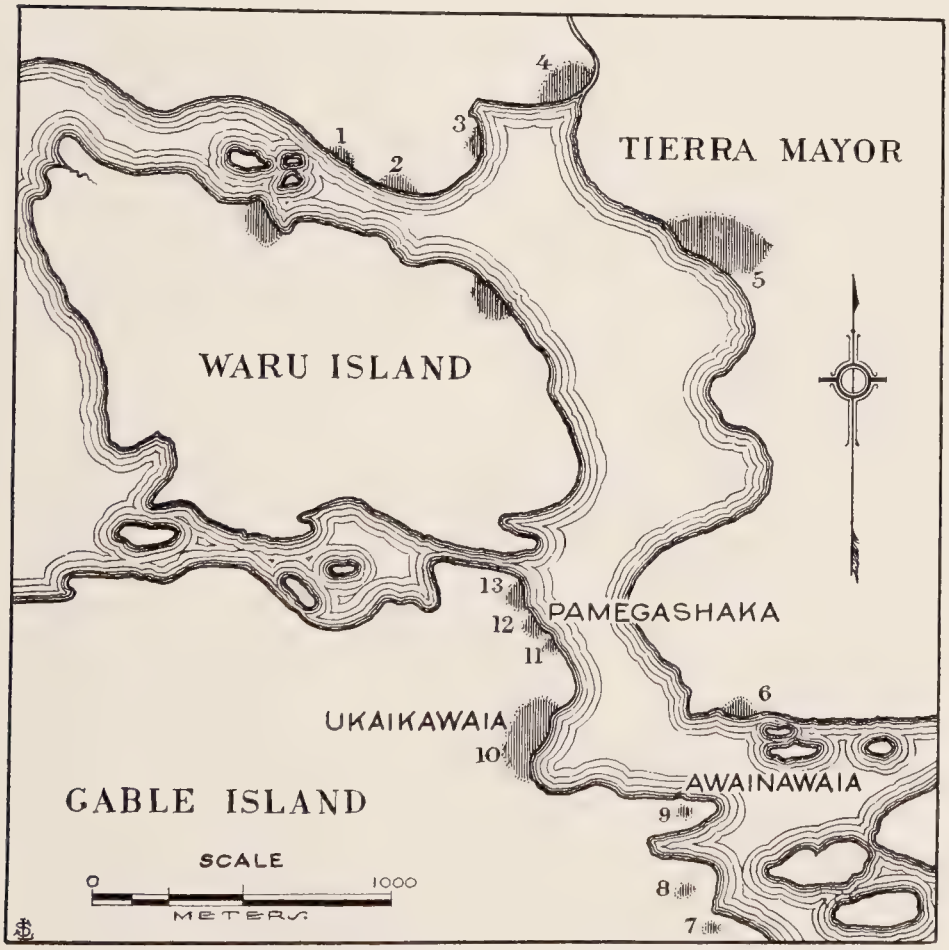


FIG. 100.—Location of shellheaps on the channel between Gable island and Tierra del Fuego.

The densest population in this group centered on Cambaceres bay, where 367 hut-pits were counted. The camp-sites on the south side, known to the Indians as Wíkirrh, display unusually deep house-pits, while Lanáshwaía (pl. XVII, *b*) on the opposite

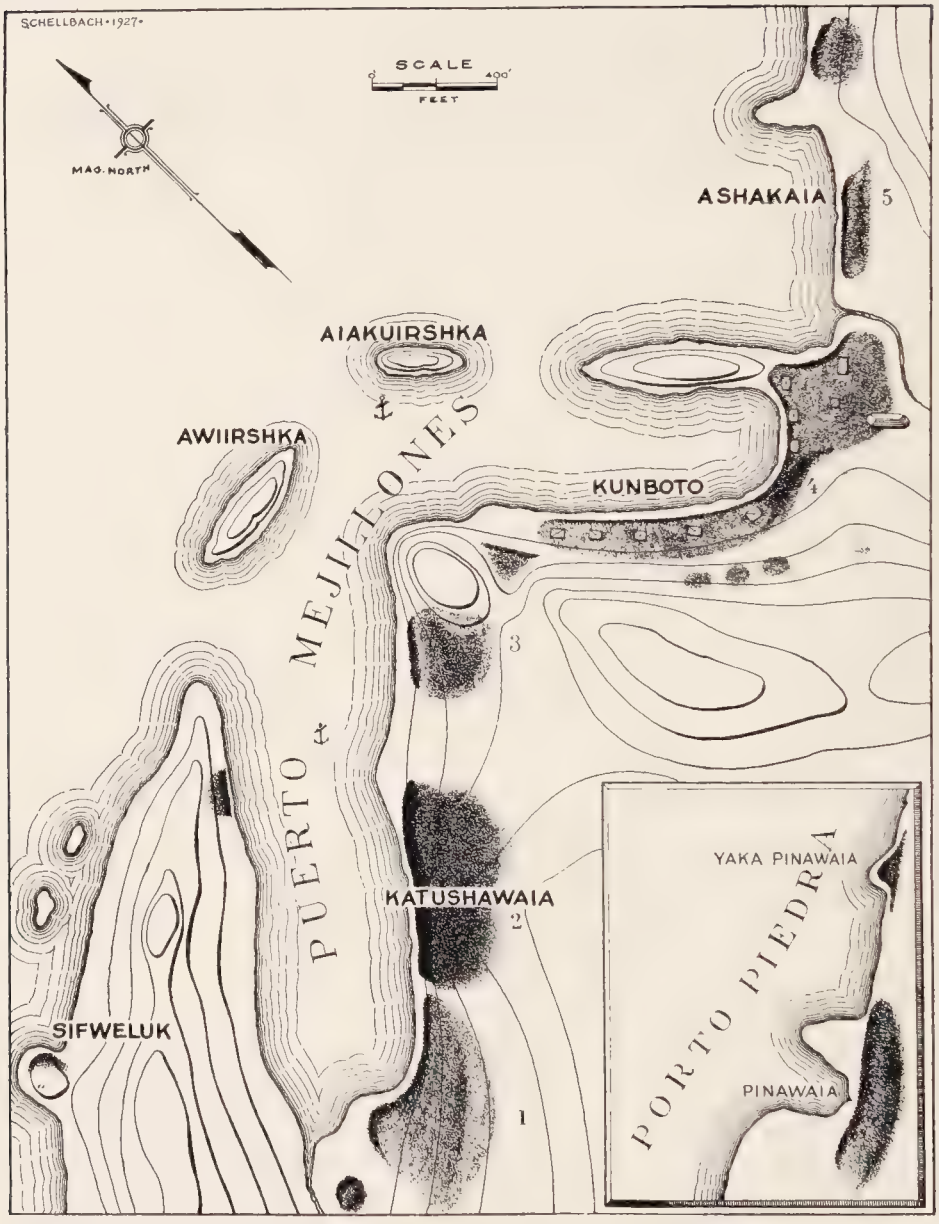


FIG. 101.—Puerto Mejillones and Porto Piedra shellheaps, Navarin island.

shore was evidently a later or less popular settlement, as the pits are relatively shallow.

About 1880 there occurred here one of those tragedies which must have been not uncommon among the Yahgan. A dead

whale floated ashore, and Ona and Haush came to join the local Yahgan in the ensuing feast. But all were poisoned by the meat and most of the company died—so many indeed that the survivors fled, leaving the bones of their relatives to whiten the beach for many years afterward.

Imiwaia bay (pl. III, lower) is completely landlocked and the tide runs strongly through the narrow entrance. Hence it is not readily accessible. The large heap No. 22 (Lanáshwaía) backs on it, but the principal access to this camp must have been from the Cambaceres side. In the northwest corner, however, there is a large and very deep midden (No. 17), of which we give a section in fig. 99. This is conveniently situated beside a small stream, and its approach from the entrance channel is sheltered from the prevailing westerly winds. Heap 51, on the north shore, was evidently abandoned long ago, as large beech-trees had grown on top of the refuse—the only case of this kind observed by the writer. The upper end of Imiwaia bay is shallow and muddy, and not suited for camp-sites.

Harberton bay, the headquarters of the Bridges' sheep ranches on the south coast, is ideally suited for camp-sites, and no fewer than fifteen were inspected. Of these, No. 2, which has been described above (page 181), and Nos. 4, 5, 11, and 13, are large and important. No. 6 was occupied by Indians in the summer of 1923–24. This bay well illustrates the Yahgan tendency to give every few hundred yards of coast-line a separate name.

The Thouctof bay middens, although numerous, are for the greater part small, and offer no peculiarities.

The other groups of shellheaps examined differ in no material way from the Harberton cluster. In fig. 100 we show the settlements along the channel between Tierra Mayor and Gable island, a sheltered, well-watered, and well-wooded region, which affords a convenient resting place at the end of an exposed strip of coast to the westward. The size of some of the middens is as follows:

Camp-site	Number of Huts	Camp-site	Number of Huts
4	6	9	8
5	34	10	40
6	7	11	12
7	1	12	8
8	8	13	12

Of these, No. 4 was occupied by the Yahgan during the summer of 1923–24. No. 10, seen in pl. XVI (upper view), was an unusually deep midden conveniently situated beside a spring.

Another group of Yahgan camp-sites, at Puerto Mejillones and at Porto Piedra along the coast to the westward, is seen in pl. XI and mapped in fig. 101. Here practically all the Yahgan now come to pass the winter months, living on the proceeds of the skins they have sold during the preceding summer or on their wages earned on various sheep ranches. They dwell in poorly constructed houses built of ill-fitting boards. The size of the shellheaps is as follows:

Camp-site	Number of Huts	Camp-site	Number of Huts
1	55	5	20
2	50	—	6
3	25	Pinawaía	75
4	10	Yaka Pinawaía	12

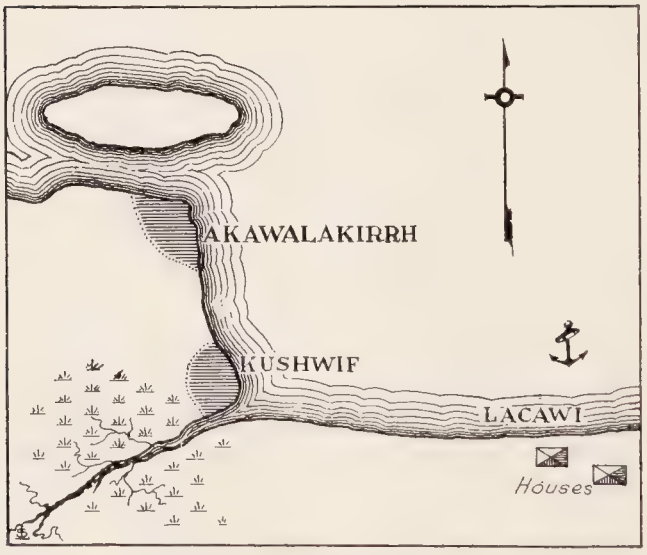


Fig. 102.—Róbalo bay, Navarin island, showing the location of shellheaps.

Puerto Mejillones really is one continuous site, and the original number of house-pits was much greater than that given above, but they have been trampled flat by cattle. The greatest depth of deposit was seen at site 2, where the débris appeared to be 12 or 15 feet thick (pls. XI, XVIII).

One of the Porto Piedra shellheaps is of unusual size. This site today is crowned by several modern houses and the house-pits have been trampled down by cattle.

At Róbalo bay of Navarin island are two large shellheaps containing 43 and 56 house-sites. The one called Akawalakirrh in

KUNBOTO SHELLHEAP, PUERTO MEJILLONES, NAVARIN ISLAND

fig. 102, pictured in fig. 103, is an exceptionally deep midden; it towers over the head, although situated on flat land. On the seaward side this heap has been undercut by the waves, which have exposed a large and solid layer of breccia near the bottom of the refuse.

FIG. 103.—Akawalakirrh shellheap, Róbalo bay.

ARCHEOLOGICAL FINDS

We have discussed at some length the nature of the Yahgan camp-sites and now must take up the very primitive remains to be found in their débris.

First, however, we should remark that the Yahgan, even today when metal tools are readily available, show a marked tendency to use anything which comes to hand, be it a shell fragment or a flint chip. Consequently, in the old days they must have accomplished much of their handiwork with such eolithic implements, and probably used their more formal tools principally for the arduous or very delicate tasks. This tendency is brought out by the small number of really well-wrought implements which have come from the middens in comparison with the comparatively great number of crude or half-finished ones.

The specimens illustrated were picked up on the seaward slope of various middens where the undercutting of the waves had

disturbed the surface. In consequence there is no evidence from what level they had come originally.

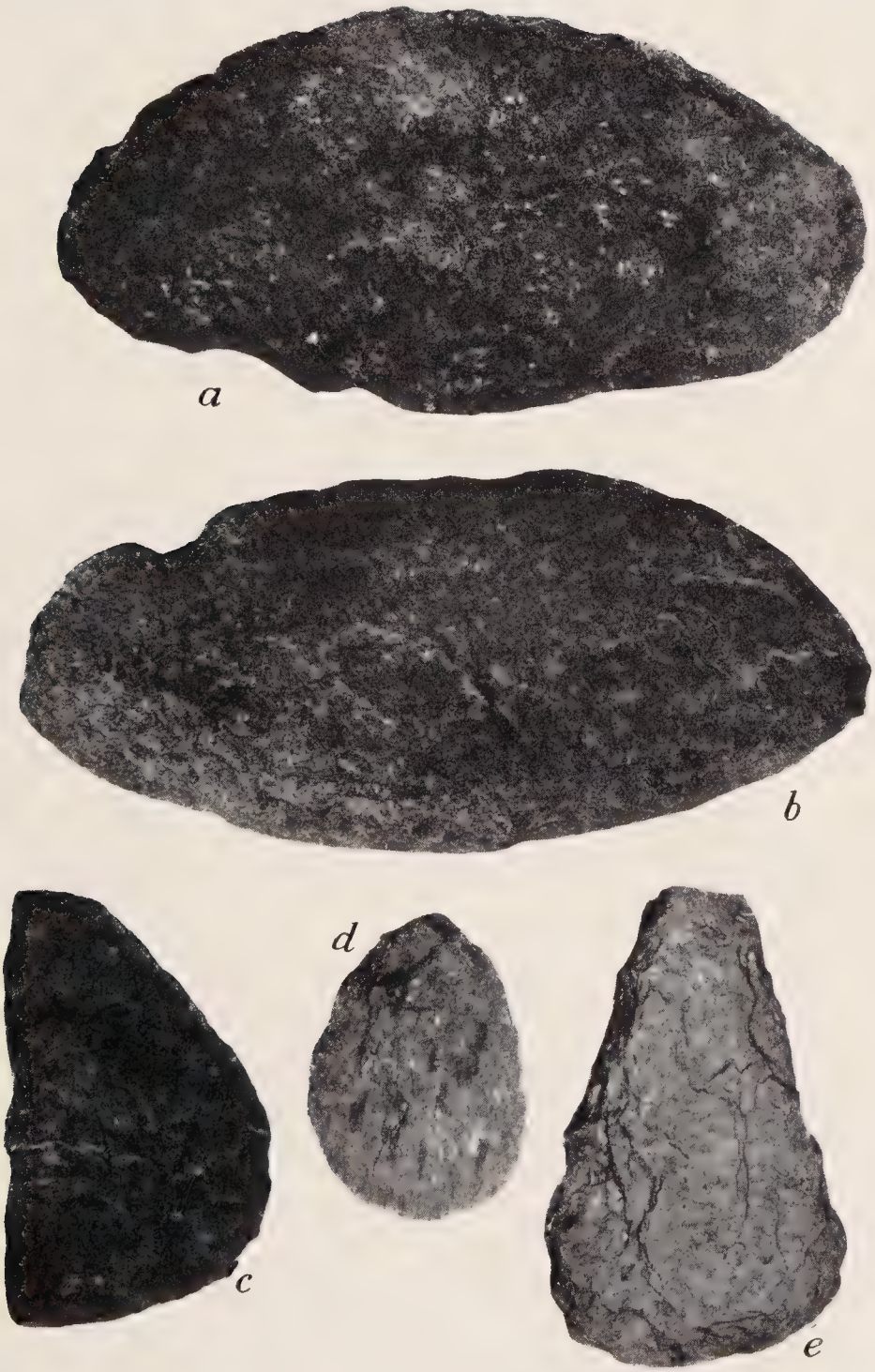
1. KNIVES.—Chipped blades apparently intended for use as knives normally are leaf-shape, from two to five inches long, and, unlike the Ona knives, are worked on both sides. In pl. XIX, *a*, *b*, are shown two examples of large knives, each with a small nock near one end to assist in the hafting. Smaller blades appear in *c*, *d*, and *e* of the same plate; these may well have served as knives or conceivably might have been barbless tips for spear or arrow.

2. SCRAPERS.—Although two kinds of scrapers come from the shellheaps, neither is very common, probably because the Yahgan did most of their scraping with shell. In fig. 104, *a*, we show a

FIG. 104.—Scrapers from Wápisatumánakulum, Harberton, Tierra del Fuego. Length of *a*, $2\frac{3}{4}$ in. (14/3977)

disc scraper with a cutting edge completely encircling it. Fig. 104, *b* and *c*, both seem to be scraper-blades fashioned for hafting in the manner of the modern Ona flesher. One of them (*c*) has a recessed curve at one end of the blade; this may have been intended for cleaning bones, or possibly it served merely to give additional grip for the lashings.

The Yahgan with whom the writer came in contact denied that they had ever used this type of scraper. Mr. William Bridges however, stated that he had seen them employed, an assertion borne out by the discovery of these archeological specimens.



STONE BLADES, WÁPISATUMÁNAKULUM, HARBERTON, TIERRA DEL FUEGO

LENGTH OF *b*, 6 IN. (14/3977)

3. Spearpoints.—Four spear- or arrow-points are illustrated in fig. 105. Of these, *a* is a triangular blade with barbs but no tang,

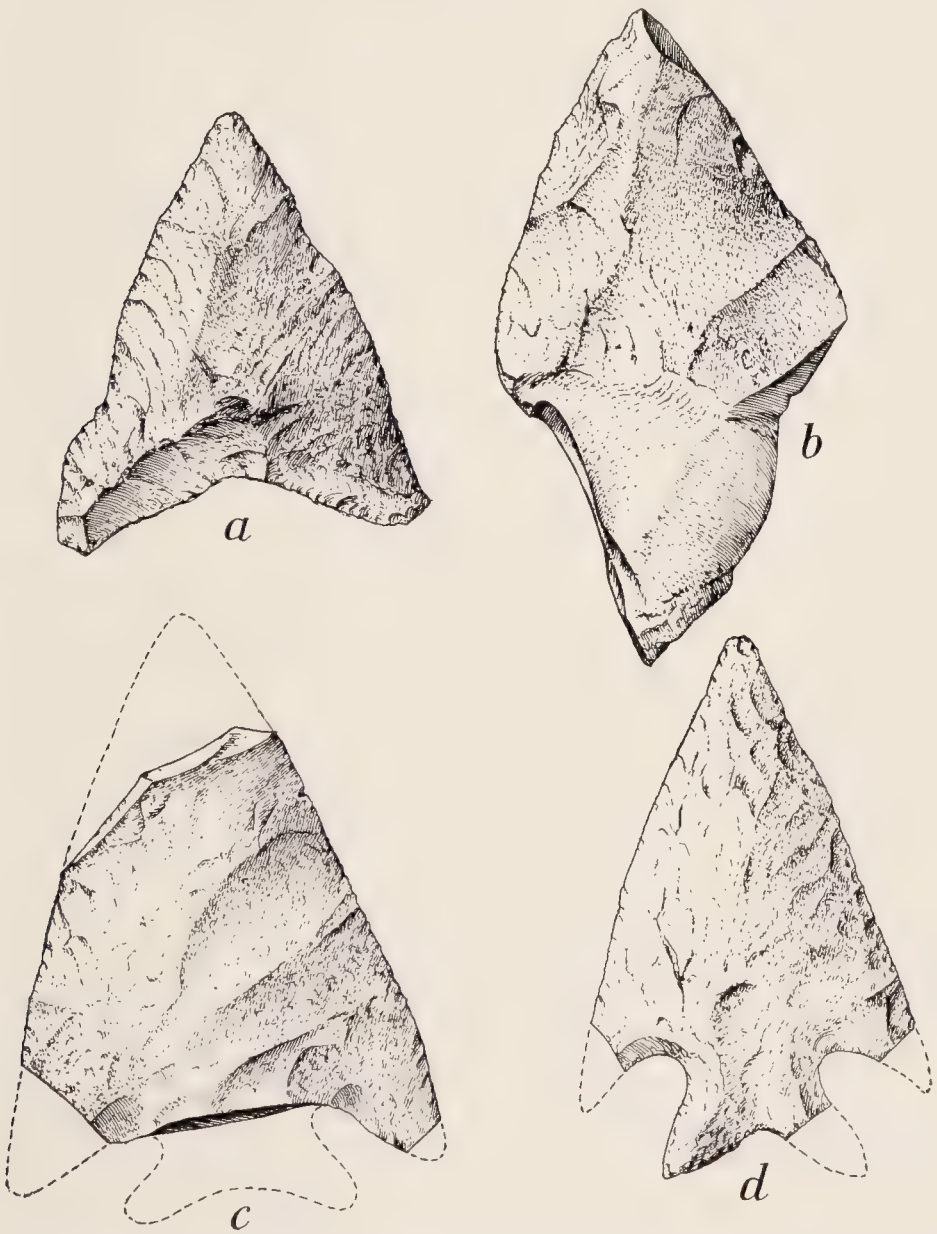


Fig. 105.—Stone blades. *a*, Near Gable island (5/8544); *b*, *c*, Wápisatumánakulum, Harberton (14/3977); *d*, Róbalo bay, Navarin island (14/4002). Length of *b*, 3 in.

while *b* has a tang but no barbs. However, *c* and *d* had both tang and barbs, and this seems to be the dominant Beagle Channel

type, because several other specimens have been published by Bove (1883) and Hyades (1891). The general shape of these points is similar to that of modern Ona arrowpoints and ancient stone points from eastern Tierra del Fuego. Yahgan workmanship, on the whole, is cruder than Ona, and to the writer's knowledge no points have been found on the south coast equal to the delicate blade illustrated in fig. 40.

4. Hammerstones, Anvils, Grease Stones.—Every Yahgan family carried an oval water-worn stone which was used for a variety of purposes, such as hammering. These stones (fig. 70) may be picked up at every ancient camp-site.

5. Bone Tools.—Bone tools of modern type sometimes are found in shellheaps under conditions implying considerable antiquity.

Age of Archeological Remains

The age of the archeological remains on Beagle channel is a problem that has intrigued the writer from the moment of his arrival there, and every effort was made to collect data for its solution. It should be frankly stated at the outset of this discussion that there is no exact answer, but it is nevertheless possible to deduce an approximate figure. There are several methods by which the problem may be attacked; thus we shall discuss (1) the variations in Yahgan speech, (2) known historical movements in other parts of South America, (3) the internal evidence of age in Fuegian shellheaps, and finally (4) their probable rate of accumulation.

1. antiquity of the yahgan dialects

As explained above, the Yahgan spoke five distinct though mutually intelligible dialects. This is rather surprising because (*a*) they were a roving people occupying only a small territory, (*b*) they were exogamous, and (*c*) the total population was only about 3000 individuals. Assuming, as seems probable, that the Yahgan reached Tierra del Fuego more or less as a unit speaking a single tongue, how long did it take them to modify their language in five distinct ways?

In the more civilized parts of the world linguistic change also has taken place, and, because language is not only spoken but written, the archaic forms are preserved and can be studied. For instance, the breaking up of Latin into the modern Romance

languages, mutually intelligible only to a very slight extent, can be observed and checked in various stages. In this instance the Latin tongue was grafted on the native speech of various conquered peoples, who undoubtedly pronounced it from the beginning with local flavor so that the separation into dialects began at the outset, its course being retarded by the educated classes. Latin, however, was spoken over a very wide area with relatively poor communications, hence there existed every facility for rapid linguistic change.

The contrast between this condition and that of the Yahgan is obvious. We should not expect the Yahgan dialects to differ nearly so much in a given time as the Romance tongues. In fact, granted the circumstance, it is surprising that there were any Yahgan dialects at all. The very presence of these Yahgan dialects shows that the tribe had remained stationary as a whole for a great many centuries at least.

2. CULTURAL AND HISTORICAL EVIDENCE

The Yahgan are the southernmost unit of a group of primitive fisherfolk who at various times have lived on the west coast of South America. In southern Peru this fishing population was displaced by the rise of the typically Peruvian agriculturists who later built the great structures seen in ruins today on that coast. While there is yet no exact chronology for Peruvian archeology, the two leading authorities, Tello [1] and Uhle,[2] agree that this event must have materialized at least 2000 years ago in order to explain the known stratigraphy of Peruvian remains.

It is a far cry from Peru to Tierra del Fuego, but in the displacement of the Peruvian coastal population there is an ostensible cause for the general shunting to the south of all the coastal peoples. If, as we shall presently show, Fuegian camp-sites give evidence of occupancy at that remote period, then we may at least tentatively consider that the displacement of the Peruvian fisherman and the settlement of Fuegia are correlated, because this change of population in Peru is the only remote migration in South America which archeology has definitely yielded to the realm of history.

In Chile there seems to have taken place a similar displacement of the early population by the Araucanian tribes. Stratigraphical

[1] Julio C. Tello, Introducción á la Historia Antigua del Peru, Lima, 1922.

[2] Max Uhle, Los Principios de las Antiguas Civilizaciones Peruanas; *Boletin de la Sociedad Ecuatoriana de Estudios Historicos Americanos*, IV, no. 12, Quito, 1920.

studies clearly prove this. Cooper (1917a) has pointed out the general resemblance of the earlier culture at such sites as Taltal with the historic culture of the Magellanic archipelago. He lists as features shared in common with the Canoe Indians: the use of spear and harpoon, and disuse of the bow, nets, coiled basketry, combs, shell necklaces, and supine burial. To this should be added the strikingly close resemblance in physical type. Granted this relationship, however, we lack sufficient evidence to translate it into historical terms, for we cannot say how long ago the Araucanians displaced the earlier culture. Possibly the change in population in coastal Peru pushed the Yahgan into Tierra del Fuego, while a later shift on the coast of Chile may have been responsible for the presence of the Alacaluf; but this is mere conjecture.

3. INTERNAL EVIDENCE OF AGE IN FUEGIAN SHELLHEAPS

For several reasons an inspection of Beagle channel shellheaps leads to the conclusion that they mark camp-sites inhabited for many centuries. We list these reasons as follows:

A. *Bulk.*—The first and most obvious sign of age is the very size of the refuse-heaps. Clearly it must have taken a great many centuries to deposit such vast masses of débris. Below we have attempted to calculate the cubic contents of the refuse near Harberton.

B. *Breccia.*—The formation of breccia in the lower levels of middens, to the writer is not a positive criterion of great age, because so little is understood of the reasons which cause shells to unite in a solid mass. If some climatic change of temporary nature caused the formation of hard floors at one time in all shellheaps, then a valuable means of determining relative age would be available, because the depth of the breccia varies.

C. *Trees.*—In one instance, shellmound 51 in fig. 98, large trees were found growing on top of an ancient camp-site. This midden was discovered on the afternoon before our departure for the north, so that there was no opportunity for cutting down a tree to count the rings and thus learn how long ago the site was abandoned. The site is a small one, with only eight house-pits situated at the base of a steep slope rising sharply from the beach.

D. *Land Subsidence.*—Many instances of the undercutting of the base of middens on both shores of Beagle channel (as can be seen

in pl. XVI) seem to indicate slight submergence of the land since the first settlement. This conclusion is not in agreement with that of Lovisato (1885), who believes that the Elizabeth Island shellheaps have been elevated several meters. N. O. G. Nordenskjöld concludes that Tierra del Fuego has risen about sixty meters since relieved from the pressure of general glaciation. The slight and recent submergence noted by the present writer may be a local adjustment since the general rising of the land.

E. *Animal Bones.*—Considerable age may be argued from the presence of badly rotted animal bones in a Harberton shellheap. In general this is an almost worthless criterion of age, but in Tierra del Fuego, where the frost scarcely leaves the ground, all animal remains tend to be preserved. The body of a sailor buried in the South Shetland islands was exhumed after several years with the flesh in perfect preservation,[1] so that Beagle channel is only 400 miles from land where animal remains do not decay at all.

4. RATE OF ACCUMULATION OF REFUSE-HEAPS

Mr. N. C. Nelson [2] has most ingeniously worked out the probable age of California shellheaps by determining three factors: (*a*) the total former population, (*b*) the bulk of the débris, and (*c*) the probable daily rate of deposit. While lacking the concrete data to apply this method of determining age as accurately as has Nelson, nevertheless we shall persist with it, because a definite figure can be reached by this method, a figure not incompatible with criteria for age already discussed. We therefore shall examine the three factors above enumerated, which are not without interest in themselves.

Nelson's estimate of the total population was simply obtained, because he dealt with a permanent village-site. In Tierra del Fuego, however, no site was occupied for more than a brief period at a time, so the population of any camp or even the portion of the year it was occupied cannot be exactly determined. Yet, although the Yahgan were rovers, they wandered in rather fixed limits, hence the number of inhabitants for an area might be calculated in relation to the food supply.

Nelson assumed that each Californian family consists of six individuals. This number might be thought too large for the

[1] *Geographical Journal*, pp. 65–66, London, 1830.

[2] Shellmounds of the San Francisco Bay region; *Univ. Calif. Pub. Amer. Archæol. and Ethnol.*, VII, no. 4, p. 345.

Yahgan family, but Martial (p. 215) assures us that six individuals was the average seen in more than 200 canoes. More specifically he states that 388 people of all ages were counted in 65 canoes, which results in an average of 5.97.

How much shore-line did an average family need to keep it supplied with mussels, conchs, limpets, crabs, fish, and sea urchins? Let us assume that they required from a third to two-thirds of a mile. This does not seem unreasonable when we recall that meat and vegetal foods also formed part of their diet. This would mean that around Thouctof, Harberton, Varela, Imiwaia, and Cambaceres bay on the average there stood 12 to 24 wigwams, containing 24 to 48 families, or 144 to 288 individuals of all ages. Furthermore, from one to two percent. of the house-sites would always be occupied at any given moment. That house-sites were tabooed where death had occurred would not affect this calculation over many years, because these places were reoccupied when the deceased had been forgotten.

A means of checking this broad estimate of the population exists in the census of the Yahgan[1] made by Rev. Thomas Bridges. The figures he gives are:

Navarin island	237
Hoste island	258
Tierra del Fuego (south coast)	218
Picton, Lennox, New islands	55
Wollaston and Hermite islands	65
Gordon island	36
Cuguawaluf (Londonderry?) island	20
Other western islands	60

From this table it appears that in 1883 there were 218 Yahgan on the south coast of Tierra del Fuego between Spaniard harbor and Brecknock peninsula. This figure represents a much reduced population, and it must be multiplied by 3 + to determine the population in the days when the whole tribe numbered 3000. We thus find that the total population of this area exceeded 654. As the western part of Beagle channel is precipitous and pierced by glaciers, most of the inhabitants lived east of Yendegaia bay, and in fact centered on Ushuaia and Harberton. Hence the assumed population of 144 to 288 for the Harberton and adjacent bays means that between twenty-two and forty-four percent. of the

[1] Published in the *South American Missionary Magazine* for 1884, p. 224.

total population of the south coast of Tierra del Fuego resided there. The true figure probably falls between these limits, so we may continue to assume that the average population of Varela, Harberton, Thouctof, Cambaceres, and Imiwaia bays was between 144 and 288 individuals.

To measure the volume of shellheaps accurately would be an endless task. However, the average house-pit with its adjacent share of débris, on the basis of exact measurements, covers approximately 570 square feet. The average depth of deposit runs about two feet, so that each house-pit accounts for 1140 cubic feet of rubbish, and the 1215 house-pits on Thouctof, Harberton, Varela, and Imiwaia bays represent 1,385,100 cubic feet of deposited material.

In order to find the daily rate of deposit, Nelson assumed that each individual ate fifty shellfish a day. By trial he proved that 5000 shells, the daily allotment of 100 people, can be packed into 1200 cubic inches which may be raised to a cubic foot when ash, earth, and animal bones are added. These figures were worked out for California Indians, but we believe that they also will apply to the Yahgan, for if they ate less vegetal food they ate more meat, which would not greatly change the proportion of rubbish.

We may now state our problem and its answer succinctly as follows:

(*a*) Probable number of inhabitants: 144 to 288.
(*b*) Total contents of shellheaps: 1,385,100 cubic feet.
(*c*) Probable rate of deposit: 1.4 to 2.9 cubic feet per day.
(*d*) Number of years sites were inhabited: 1300 to 2600 years.

In criticism of the age deduced for the shellheaps we may point out that while no factor—even the number of heaps in the area discussed and the number of house-pits in those visited—is certain, nevertheless there is no reason that the errors should be cumulative. At any rate, the application of Nelson's method to Tierra del Fuego shows that it has been settled a very long time. To the writer it seems that the larger limit selected for the population is too great, and that the bulk of the shellheaps might well be considerably greater than estimated, because the assumed depth is certainly a very conservative figure.

In view of these figures and the other criteria for age already adduced, it seems not unwarranted to believe that the south coast of Tierra del Fuego has been occupied for 2000 years at least.

Part III

COMPARISONS AND CONCLUSIONS

ORIGIN OF THE FUEGIANS

THE origin of the tribes of Tierra del Fuego is obscured in the mists of the past, but study of their physical type, their language, and their cultural development make it possible to trace them far to the north. Evidence of all kinds blends in agreement that the Yahgan and Alacaluf, the Canoe Indians, came down the west coast of South America, where the remains of their ancestors or relatives can be identified at least as far north as Peru. Furthermore, the Foot Indians, Ona and Haush, clearly are connected directly with the inhabitants of Patagonia and perhaps with the tribes of the Chaco and the Amazon valley. The evidence on which these conclusions rest we shall examine in detail.

1. Somatological Evidence.—Along the west coast of South America a short-statured, dolichocephalic strain repeatedly has been discovered under conditions indicating great antiquity. These people, if not the direct ancestors, may well have been collateral relatives of the Canoe Indians of Tierra del Fuego and Patagonia Occidental. This physical type, for reasons too complex for discussion here,[1] is now regarded by discreet and cautious students as the most ancient human strain in the New World. The anthropometry of the Yahgan, herein discussed, indicates that, while they may basically belong to this physical group, they have acquired a short-statured and brachycephalic mixture, generally regarded as the second type to reach the Western Hemisphere. Somatological evidence indicates then that the Yahgan are a cross of the two most ancient types of man in the New World.

The Ona, on the other hand, mesocephalic like the Yahgan, but exceedingly tall, appear to be a cross of two tall strains and of varied head forms. The dolichocephalic factor in this tribe may be

[1] This subject has been covered by Dixon (1923), and by Hrdlička in *Proc. Amer. Philos. Soc.*, LXV, pp. 157–160.

of the early variety correlated with short stature, but proof is wanting. At any rate it seems obvious that relationship exists between the Ona and the Tehuelche, legendary giants of Patagonia. To be sure, the modern Tehuelche are brachycephalic, but their heads may be shortened by deformation and the use of a cradle-board, for ancient skulls from Patagonia are mesocephalic or even dolichocephalic.

2. Linguistic Evidence.—Connection between either the Yahgan or Alacaluf tongue and any other linguistic group has not been demonstrated. Ona and Haush are clearly related to each other and to the Tehuelche of Patagonia, thus forming a linguistic family.

3. Culture Evidence.—For the Canoe Indians of Tierra del Fuego we have a well-developed cultural chain leading northward along the west coast of South America. From the Yahgan culture to the Alacaluf, and from the Alacaluf to the Chono, more than 600 miles north of the Straits of Magellan, there is but little change in material equipment or manner of life. From Chiloe island far northward archeological remains underlying those of the historic tribes of the coast may be attributed to the ancestors or collateral relatives of the Fuegians. Skeletal remains of the early shellheap culture are dolichocephalic and short of stature, and so belong to the principal strain of the Canoe Indians. Material culture of the coast north of the Chilean islands cannot closely resemble that of Fuegia, for the climate and character of the country rapidly change from moist woodlands to arid desert; yet, as we have already pointed out (pp. 193–194), significant parallels exist. To these we may add that in the balsa with high pointed ends, typical of the desert coast, we have a possible prototype for the Fuegian canoe, shaped like the new moon. On the Atlantic coast of South America there are no sea-going canoe Indians south of the equator.

The Foot Indians, Ona and Haush, we have shown to be linguistically allied with the Tehuelche of Patagonia. Physical resemblance between the tall Tehuelche and Ona tribes is striking. Among cultural features found in common we may list the skin robe, skin petticoat, man's bag, moccasin type, house type, transversely hafted scraper, skin water-bag, use of fungus for tinder, tattooing, bow and arrow, etc. Clearly this evidence indicates that the three tribes lived together on the Patagonian plateau long enough to develop a typical culture in common. A further proof

that the Ona once dwelt in Patagonia, according to Mr. William Bridges, is that they have a legend concerning a large flightless bird, which obviously refers to an ostrich, or rhea, found in Patagonia but not in Tierra del Fuego.

We can trace then with reasonable certainty the Foot Indians of Tierra del Fuego to the Patagonian plains, but to say when and whence they came to Patagonia is a difficult problem, to solve which but slender evidence exists. I am inclined to see relationship with the tribes of the Chaco and the upper Amazon valley. This relationship is probably rather with an earlier population than with the historic peoples. Mysterious remnants of these earlier settlers exist in the upper Amazon valley. Apparently they are held by the dominant population in a position intermediate between slaves and pet animals. Little is known of their manner of life, except that they are nomadic hunters using the bow and arrow but having no canoes or houses. If a list of culture parallels between the Amazon tribes and Fuegian Foot Indians be made, the features in common, it will be found, with but few exceptions are those we shall show presently to be basic to all Indian culture. It therefore follows that no exact deductions can be made from existing dat chiefly characterized by the primitive state of all the peoples v ed We find exceedingly significant, however, the parallel ev op ent of masked dances and initiation in each region, a milar already indicated (page 95).

4. Chro l Evidence.—One can but wonder when and how th reached Tierra del Fuego. The first-comers doubtl Yahgan, for we have advanced positive evidence that had occupied their historic territory for somewhere arou enty centuries. Next to arrive in all probability were the Alacaluf, unless it is thought that the Yahgan, to reach southern Fegia, push through the Alacaluf country after its occupancy. eauvoir (19 records a tradition among the Ona that they reached Tierra del Fuego by a land bridge, but afterward a cataclysm formed the Straits of Magellan and isolated them. This tale will hardly bear the scrutiny of geological opinion, and so we are forced to the conclus that the Foot Indians were ferried across—by the Alacaluf presumably, because they had canoes capable of carrying fifteen or twenty people, while the Yahgan had only small ones.

This sequence of settlement is based on the theory that the Foot Indians could not and did not carry themselves across the straits. To be sure, the Tehuelche stuffed their hide *toldos* with saplings and made rude coracles like the bull-boats of North America.[1] In these, with numerous wettings and considerable peril, they crossed the Patagonian rivers. But by no stretch of the imagination could the storm-vexed tide-ripped waters of Magellan strait be navigated successfully in such flimsy craft.

Mr. William Bridges assured me that neither the Ona nor the Haush, to the best of his knowledge, had ever used a boat. In the summer of 1907 certain Indians were taken to Navarin island to tend sheep, and displayed great apprehension upon the waters of Beagle channel. No Ona could swim, and this tribe crossed swift rivers by forming a huddle so that any individual who stumbled would not fall and be drowned. Lacking all knowledge of navigation, unable to swim a stroke, and inherently afraid of deep water, how could the Foot Indians have crossed to Tierra del Fuego without the aid of others?

Of the Foot Indians, evidently the Haush came first. This is indicated by their geographical location in the southeastern corner of the island, and is corroborated by the existence of place-names of Haush derivation in territory occupied in recent [illegible] by the Ona.

The linguistic diversity of the Haush, Ona and Tehuelche implies separation into distinct groups a very [illegible] ago, because language in that part of the world is known to be exceedingly stable and slow to change. Thus Lista[2] [illegible] points out that the tongue of Patagonia has undergone [illegible] since Pigafetta, the historian of Magellan, collected [illegible] 1520. Similarly Cooper (1917, p. 28) remarks that the Alacaluf vocabulary made by La Guilbaudière not later than 1696 indicates linguistic stability since that date.

We have no archeological indication of when the Foot Indians reached Tierra del Fuego. Yet no aspect of Ona culture implies separation from the Patagonia mainland by more than a few centuries before the voyage of Magellan.

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[1] Bourne, 1853, pp. 132–134.

[2] 1880, p. 116. Comparative vocabularies of Pigafetta (152[illegible]), Viedma (1781), d'Orbigny, Musters, and Lista, while not identical, are closely similar.

FUEGIAN CULTURE STATUS

We have considered the Foot and Canoe Indians of Tierra del Fuego as they have revealed themselves to modern investigation and as they have been reflected in archeological remains. Before closing this account it will be well to fix their position in relation to cultural development and adaptation to environment in other parts of the world. We shall therefore examine the attainments of the Paleolithic and Neolithic inhabitants of Europe, of the Seri Indians of Mexico, and of the Eskimo—all in the light of Fuegian culture.

A.—Fuegians Compared with Primitive Europeans

Assayed by the standards of Old World archeology, the Fuegian tribes stand definitely in the early Neolithic stage of culture, for they understood the use of the bow, made coiled basketry, used canoes (which may or may not have existed in Paleolithic Europe), and they had domesticated dogs. As for stoneworking, however, aside from some of their arrow- and spear-points (which are not only well made but barbed), Fuegian implements are fully equaled by finds dating from the Acheulean and Mousterian floors in Europe; that is to say, the latter half of the lower Paleolithic period.[1] In fact, in the stone drill, invented during the Mousterian age and perfected in the Aurignacian, Europeans possessed a tool unknown to the Fuegians, who could puncture nothing harder than hide or bark with their bone awls. By the time of the Aurignacian period Europe also had developed the bone needle with a pierced eye to which the Fuegians did not attain.

Magdalenian Europe offers strong likeness to the Canoe Indians of Tierra del Fuego, owing to the very similar types of barbed bone harpoons used in both regions. Yet by this time in Europe the chipping of stone had risen to the level of an art, the spear-thrower was widely used (an implement which one suspects that the Fuegian tribes may have forgotten), clothes were carefully

[1] It is unfortunate that the names attached to the great primary periods of human life should denote technological methods of manufacturing stone implements, for current practice distinguishes these epochs and their subdivisions by the fauna and by the kinds of utensils in use rather than by the manner in which they were made. This change in classification became necessary when it was recognized that the Paleolithic technique persisted into the Neolithic and even the Metal ages. We must emphasize that these terms are without chronological significance in the New World.

tailored (as attested by the finding of bone buttons), elaborate three-strand necklaces were manufactured, and, above all, sculpture was common and painting had reached both relatively and absolutely a very developed plane. The depiction of masked human figures suggests parallel religious phantasmagoria in both regions. In contrast the Fuegians were totally devoid of sculpture, and their painting was limited to the crudest daubs. Their necklaces were most primitive. Their garments were merely wrapped around the body and held in place by hand, or, if they did not completely envelop the body, were tied on by thongs crossing the bare flesh.

As to polished stone implements, Tierra del Fuego has produced few. In fig. 41 we show a bola from the east coast. Outes (1905, p. 427) has fully demonstrated that the true home of this weapon is in the northeastern Pampas and that it was unknown in Patagonia until the eighteenth century. Clearly it is no ancestral arm carried to Tierra del Fuego by Foot Indians in remote centuries, but rather a recent introduction, not long antedating the white colonization. Also we have seen a stone spike excavated in Yahgan territory. Apparently it has been shaped in part by pecking; at best it is an isolated instance of the Neolithic technique.

The rarity of polished stone implements in Fuegia is to be explained not by the lack of aptitude but by the indolence of the natives. To so-called civilized man the chipping of stone seems a mysterious craft, while it is patent that anyone who takes the time can grind a stone to the desired shape. As a matter of fact, the chipping of serviceable tools can be learned with a few days' practice, though of course the more delicate flaking, as with all handicraft, can come only as the result of long experience. And furthermore, chipped implements can be turned out quickly,—it takes only ten or fifteen minutes for a skilful Ona to finish a most delicate arrow-point,—while ground stone implements require patience, mental discipline, and foresight.

This point is one to recall in estimates of all or any phases of Fuegian culture, for it will be found that deficiencies arose not from any innate mental or physical handicap, but from laziness and lethargy. This generalization applies not so much to the necessaries as to the conveniences of life. Thus the Ona bow and the Yahgan spear are admirable weapons, but the houses of both tribes were woefully inadequate. Yet there is no reason why the Yahgan and Ona should not, with forethought and initiative,

have made themselves as comfortable as other tribes occupying an equivalent environment. That they did not, to the writer indicates a lack of something vital in their mental makeup.

The brief comparison we have made between primitive European and Fuegian cultures shows that although the Fuegians had partly attained the technological plane called Neolithic in the Old World, nevertheless in most respects they were scarcely better off than the semi-simian Neanderthal man of Europe. Clearly then they were laggards or backsliders in the development of mankind, so that in depicting their manner of life we are justified in assuming that we are recreating a vista of life in Europe or elsewhere many thousands of years ago.

However, the tribes of Tierra del Fuego are not a unique phenomenon, as we shall show by comparison with an equally though differently untutored New World group.

B.—Fuegians Compared with the Seri

The Seri, who inhabit a barren territory on the eastern shore of the Gulf of California and the adjacent islands, of which the largest is Tiburon, are one of the most primitive Indian tribes on the North American continent. Their climate is hot and dry. Their food supply is abundant—both marine and terrestrial. Like Fuegia the region occupied by the Seri is isolated from the main stream of cultural development, so that the native society probably represents a form of life much more wide-spread long ago.

Like the Fuegians, the Seri had no agriculture and no domestic animals except the dog, which indeed seems to have been half-wild. Their most important food was the turtle, which they caught with a harpoon having a detachable head tied to a cord. This may be compared to the Yahgan seal-spear. Long ago they used a two-headed barbed spear with the barbs facing inward to catch fish. The Yahgan also employed a two-headed fish-spear, but did not set the barbs inward. For boats the Seri made reed balsas with high pointed ends, a seaworthy craft but one which can be used only in warm climates because in rough weather the crew are drenched with spray or wet by water coming through the floor. These balsas the Seri propelled with clam-shells or boards held in the hands. In addition to spearing fish off-shore the Seri also caught them with their hands in shallow pools at low tide like the Ona, and they obtained on the beach large quantities of shellfish—chiefly clams and oysters.

On shore the Seri gathered various wild vegetal foods. They clubbed roosting pelicans at night. They caught also many deer and rabbits. We use the word caught advisedly, for usually the Seri, fleet of foot and hardy, ran these animals down and literally caught them in their hands. Meat was eaten raw except when there was an oversupply. Then it was partly cooked to tempt their jaded appetites. At times in hunting and regularly in war they employed a bow and arrows of simple type. The arrow had a wooden tip, rarely a chipped stone point.

For tools the Seri used a bone or a wooden awl, a wooden marline spike, a stone hammer and anvil, and a clam-shell. The latter served as a knife, but its shape was not modified, nor was it set in a handle. Manual dexterity was at a minimum among these people, and their implements and weapons were even more primitive than those of the Fuegians.

The fundamental Seri garment was a pelican-skin robe, which, like the Yahgan cape, was shifted from side to side with the wind in inclement weather. Also they wore at times a kilt and sleeved shirt of woven material, and thus they placed themselves on a higher cultural plane than the Fuegians, for they not only had acquired the art of weaving, but of tailoring their garments, neither of which were known to the Indians of Tierra del Fuego. In addition, the Seri wore a belt, often of snake-skin, and sometimes sandals of turtle-flippers. They adorned their persons with necklaces of seeds, of wooden beads, of shell, and of hair. They painted designs on the faces much more elaborate in character than those of the Ona and Yahgan.

Seri houses, scarcely better than the Ona windbreak, were arches of saplings partly shingled with sponges and turtle-shells. Inadequate even in a warm climate, yet they offered more protection comparatively than the Fuegian houses. As the Seri were constantly moving from place to place, these rude shelters were frequently abandoned to be reoccupied on some other occasion.

Of household furniture the chief article was a globular pottery water-jar, because water was scarce in Seriland and had to be transported long distances. A yucca ring-base was provided for the water-jar, and at times two jars were transported in nets slung on a shoulder yoke. In addition the Seri sometimes made a cooking-pot, an open dish, miniature vessels, and crude figurines; they also used a shell cup, and made simple coiled baskets. Their

babies they carried on wooden frames like the Ona. Fire they made with a drill.

From the above remarks it appears that other inhabitants of the New World lived on a technological plane different in detail but no higher than the natives of Tierra del Fuego. Indeed in many respects—notably the lack of a knife and a scraper—the Seri are the more primitive. Yet their need was not so great, because the climate they enjoyed did not make such demands on their vitality.

When we examine social institutions we find the Seri on a markedly higher plane than the Fuegians. The tribe as a whole had marked national consciousness. It was divided into exogamic totemic clans based on maternal descent. Authority was lodged in the matrons, delegated to the elder brother for such masculine occupations as war and hunting. Religious concepts and practices also were on a higher plane than in Tierra del Fuego.

On the whole then we may say that the Seri, like the Fuegians, were a marginal group representing an early cultural stream; that both peoples were markedly deficient in houses, tools, and accouterments; but that the Seri, being closer to the fringe of higher culture, had borrowed in rudimentary form such higher arts as pottery-making and weaving, and had become endowed with more advanced religious and social practices. In both cases it seems that, although migratory by nature, their peregrinations had been circumscribed within fixed limits with resultant cultural atrophy, so that centuries had passed with little modification in their form of life.

The status of very primitive groups like the Fuegians and the Seri has bearing on the unknown pioneers who settled the New World, for the simplest and crudest tribes of the present may reflect the condition of their primitive migratory ancestors. We shall examine then the evidence afforded by such backward groups to throw light on the time when the Americas were settled and on the nature of the culture that was first introduced.

Boas,[1] Wissler,[2] Kroeber,[3] and others have brought forward evidence that man reached the New World in a state of cultural development corresponding to the beginning of the Neolithic period in Europe. This hypothesis rests on fairly well assured

[1] The History of the American Race; *Annals N. Y. Acad. of Science*, XXI, 1912.
[2] The American Indian, New York, 1917.
[3] American Culture and the Northwest Coast; *Amer. Anthr.*, N.S., XXV, no. 1. Also Anthropology, New York, 1923.

ground. In the first place, no American tribe, past or present, living on the Paleolithic plane of culture has yet been detected. In other words, all American Indians, even the most primitive such as the Fuegians and the Seri, have Neolithic elements in their culture. Hence with justification we can assume that man did not reach America until the Neolithic epoch. Furthermore, the absence from the Western Hemisphere of all typical Old World domesticated plants and animals, except the dog, shows that all significant migration to America had ceased before these elements had been developed. Thus the settlement of the Americas is fixed by these limits: the close of the Paleolithic period, but before the Neolithic period had fully dawned.

When did the Neolithic period begin? According to the elaborate chronological yard-stick developed for European archeology, this would take us back more than 10,000 years. But Europe geographically is only a peninsula of Asia, and archeological evidence denotes that the Neolithic culture developed in Asia and spread to Europe long afterward. Primitive Neolithic arts and industries may have reached America as soon as, if not before, they penetrated Europe. At present we cannot say whether the migration to the New World was completed in a century or in a thousand years. We cannot hope further to correlate Old World and New World archeology until stratigraphical and chronological studies in Asia have yielded the secret of the development of Neolithic culture.

To the above remarks we may add that, according to current geological opinion, glaciation need not be considered a barrier to migration, because the ice sheets were not in existence at the period (as indicated by the cultural evidence) when the settling of America took place. Of the three North American ice sheets, the Cordilleran or western field, which alone could have proved a barrier to travel from Asia, was the first to disappear. The Labrador sheet, the last and most recent, is estimated to have released Niagara Falls from 20,000 to 35,000 years ago.[1]

Well documented New World archeological finds, obviously of great antiquity, have been unearthed in North, South, and Central America during the last two decades. The remains to which the greatest age is assigned, however, Basket-maker in the United States and "Archaic" in Mexico and Salvador, all indicate a much higher technological plane than that of the Fuegians or Seri.

[1] See A. P. Coleman, Ice Ages, Recent and Ancient, New York, 1926, p. 69.

Hence it seems that the limits of our definite knowledge of the past are far from extending back to the time of the first immigrants. However, as pointed out by Kroeber,[1] the primitive American cultural traits can be deduced by listing the elements of primitive nature having a wide distribution through both continents. On this basis it is not unsound reasoning to assume that characteristics common to widely separated primitive tribes in radically different environments, such as the Seri and the Fuegians, are basic in American culture. These features are:

1. A windbreak or domed house of saplings covered with the most readily available materials.
2. Untanned skin robe sewed with sinew.
3. A small kilt-like garment.
4. Use of facial and body painting.
5. Simple necklaces.
6. Cradle with cross-slats.
7. Coiled baskets.
8. Fire-drill. (This the Patagonians had, and probably once the Fuegians.)
9. Boats or rafts with high pointed ends.
10. The self bow and stone-tipped arrows.
11. The harpoon with single, double, and detachable heads.
12. Shellfish, fish, game, and wild vegetables as food.
13. Domesticated dogs.

From this list we gain a definite picture of the material culture enjoyed by the first settlers in the New World. It is not a complete visualization, however, of their manner of life, because it does not include social and religious customs. Among these in all probability should be included shamanistic control of spirits and disease, puberty rites attended with the infliction of physical suffering, masked ceremonials, and social organization based on local groups of blood relations. All these added features were characteristic of all the tribes of Tierra del Fuego.

We have listed as probable features of primordial American culture certain traits not included by Kroeber. On the other hand he incorporates others not found in Tierra del Fuego, such as the spear-thrower, twined baskets, mats, mortars, rattles, whistles, and flutes. Their absence from Tierra del Fuego may indicate that they should not be considered as primitive American traits,

[1] *Op. cit.*

because they are objects which would have been valuable to the Fuegians, because they could have been made from materials easily obtainable, and because they were not superseded by other inventions. If the Fuegians had enjoyed these features, I can see no reason why they should have given up using them; yet some of the listed traits, the spear-thrower for instance, have such wide New World distribution that it is hard to place them on any but the earliest cultural plane.

Fuegians Compared with the Eskimo

We have seen that the natives of Tierra del Fuego lived on a cultural plane comparable with that of the early inhabitants of Europe, who were the advance guard of culture-bearers from central Asia toward the west, just as the Fuegians may have been toward the east. We have also seen that the low plane on which the Fuegians lived was not an isolated phenomenon in the New World, but was approached or duplicated elsewhere. We shall now compare the cultural status of the Fuegians and the Eskimo, because their respective habitats are environmentally parallel and their necessities were similar. In fact the Eskimo are called on to face the more rigorous conditions of the two, for they live in higher latitudes where the winters are darker and colder, while the lack of trees in many places forces them to exercise great ingenuity to find substitutes for wood.

The Eskimo inhabit the Arctic coast of North America and the adjacent islands, including Greenland. As in Fuegia, the vegetation of their habitat is not rich enough to support life, so that they have to subsist principally on animal food. During the winter the polar seas freeze over, and the Eskimo spear seals as they rise to their blowholes in the ice. When open water forms, they take to the sea in boats made of a wooden frame covered with hide, which in every way seem stronger and more seaworthy than the Yahgan canoes. In these they spear seal, walrus, and whale. In summer the Eskimo spear fish and birds, and make long trips inland to shoot deer with bow and arrow. With the return of winter, seal again becomes their only food supply.

For houses, in the summer the Eskimo use skin tents or stone walls roofed with skin which give better protection than the Yahgan wigwams and are infinitely superior to the Ona windbreak. In winter they make themselves snug in ingeniously constructed,

multi-chambered, snow houses, usually provided with skin linings, windows, and ventilation holes. They take advantage of the propensity of heat to rise, locate their houses on sloping ground, and place their living-quarters in the uppermost part of the house. Under favorable circumstances the temperature can be maintained at above 70° or 80° Fahrenheit by means of an oil lamp.

As for clothing, the Eskimo are as well provided as the Fuegians were deficient. Their carefully tailored fur garments not only supply warmth and protection to every part of the person, but are so skilfully designed that adequate ventilation is supplied as well. Arctic explorers of recent years have been unable to design garments better suited to the climate and have adopted the Eskimo dress.

The chief weapons of the Eskimo are the harpoon and the bow. Their harpoons are made with detachable heads like the Yahgan seal-spear, but the points are designed to turn in the flesh of the wounded animal so that they form a toggle when it tries to escape. Harpoons of slightly different size and type are employed for small seals, for ordinary seals, for walrus, and for whale. To secure the larger animals a cord leading from the harpoon-head is attached to inflated seal-hides or hoop-drags, which enables them to tire out the wounded animal rapidly. The great superiority of the Eskimo equipment lies partly in their ability to drill bone and wood, so that they can lash or rivet joints more securely than the Fuegians. Also all the accessories, the ivory support for the hand lashed on the shaft, the loop with ivory clasp to hold the harpoon line, ivory plugs to stop the wounds of the slain animal, ivory swivels, ivory toggles, etc.—all these show a control of material never attained by the Fuegians. Furthermore, these details show mental superiority in that the Eskimo look beyond the bare necessities of the chase and provide themselves with comforts and conveniences.

The Eskimo bow is made of one or more pieces of spruce-wood riveted together, or of antler. It is sinew-backed—an adequate and powerful weapon in spite of a lack of proper material for bows. The arrowhead is usually ground stone riveted to a foreshaft lashed to a main shaft. In addition the Eskimo have a specialized type of bird-spear and fish-spear far superior to anything in Fuegia. Also they propel lances with throwing-sticks. Furthermore, they catch fish with hook-and-line, and with an ivory minnow for bait.

When we examine Eskimo tools it is found that their makers are neat and finished workmen, and that they provide for their primitive

necessities most adequately. Their knives and scrapers are ordinarily of iron or, when metal is unavailable, of stone ground down to thin, uniform, and symmetrical blades, which are hafted to wooden or ivory handles with rivets or gut lashings. Other tools include ivory needles, thimble, sharp graving tool, arrowshaft straightener, and—most important of all—the pump-drill. This last implement makes possible the rapid drilling of bone, stone, and wood, which contrasts strongly with the inability of the Fuegians to pierce anything harder than bark or skin. Among other elements of Eskimo material culture we should mention the stone lamp, fork and spoon, drinking tube, snow-goggles, and the sled with harness, traces, and toggles for pulling it.

Esthetically the Eskimo are not on a low plane. Their garments are distinctly beautiful from the juxtaposition of contrasting furs and are further adorned with beadwork. Their carvings in relief are realistic and charming. Incised drawings on bone and ivory show vigor and imagination. Their games, including cat's-cradle, are much more complex than Fuegian pastimes.

Like the Fuegians, the Eskimo lack definite social organization larger than the family. Both groups are polygynous. The Fuegians trace blood lines farther and are more rigid in debarring marriage of relatives.

Religiously the Eskimo are on the same plane as the Fuegians, but their religious activities played a larger part in their lives. In general they believed in supernatural beings, most of whom were malevolent, and they attempted to appease these creatures by prayer and offerings.

We have given but the briefest outline of Eskimo culture, for it is too complex to be summarized in a few words; yet enough has been said to indicate that the Eskimo live entirely as a hunting people, but in almost every aspect of life they are better off than were the natives of Tierra del Fuego. And this in spite of the more rigorous climate the Eskimo have to face. However, the comparison is not entirely fair, because the Fuegians were completely isolated, while the Eskimo received cultural impulses from more civilized neighbors such as the tribes of the northwestern coast of Canada or of northeastern Asia. The belief is not unjustified that climate and environment are the limiting factors with the Eskimo, and that, given better opportunities, they would work out a superior mode of existence.

We have already pointed out that the lack of mental vigor seemingly underlay the cultural deficiencies of the Fuegians. This in turn we may trace to their manner of life, thus forming a vicious circle. Partial nakedness in the snows of winter is possible only to those endowed with a constitution we cannot help but admire, yet it can only result in unusual demands on the vitality and in the stunting of mental growth. Out of such pictures as the naked mother nursing a naked new-born child with driving sleet melting on them both, described by Darwin (1839, p. 235), one cannot envisage the breeding of mentally alert human beings. The Yahgan, writes Barclay (1904), mark "the limit to which a man may strip himself of all aid and comfort and yet survive and perpetuate his kind." "Their skill," says Darwin, "in some respects may be compared to the instinct of animals; for it is not improved by experience."

The writer does not regard the climate of Tierra del Fuego as a necessarily stunting factor; indeed the ample and hospitable scale of living introduced by the sheep ranchers proves that it is far from so. Wild foods—vegetal, game, and fish—can be procured with comparative ease. The discomforts of aboriginal life could well have been eradicated by forethought and a more aggressive mental attitude. This the missionaries tried vigorously if unsuccessfully to instil, and so the Fuegian tribes have quietly melted away in the face of the competition of our ruthless civilization.

APPENDIX

VOCABULARIES

WHILE I made no study of Fuegian linguistics, yet I endeavored to record the native terms for all aspects of their material culture and to set down such other linguistic data as came my way without special effort on my part. These words are given below. Fuegian phonetics and variation in pronunciation have been briefly discussed in the main text. To properly represent the explosive force of the Ona speech is beyond any phonetic system in use (see page 49). I have employed consonants in their normal English values, except *q*, which has been used to designate *ch* as in *loch*, and ^{n} and ^{g} which are scarcely audible. Vowels have the following values:

a as in *father*
e as *ey* in *they*
ĕ as in *hen*
^{e} a barely audible *e*
i as in *police*
ĭ as in *ill*
o as in *no*
u as in *rule*
ŭ as in *gut*
au as *ow* in *how* [1]
ai as in *aisle*

ONA VOCABULARY

ANIMALS AND BIRDS

carancho, *karkai.*
dog. See page 50.
dove, *shĕt.*
duck: (1) A black duck, *teústhte;* (2) a black duck, *giaíirsk;* (3) pintail duck, *háto;* (4) a small duck (*Querquedula cyanoptera*), *kenétki;* (5) a white-bellied duck, *oyé;* (6) steamboat duck, *tárri;* (7) unidentified duck, *kokopomúts;* (8) unidentified duck, *hotls.*
fox, *uash.*
goose, kelp, *seéch.*
goose, upland: (1) male, *kaikén;* (2) female, *húrru^{n};* (3) very large, *harrh.*
guanaco. See page 49.
gull, *kaprrh.*
hawk (?), *kawárrhi.*
nutria, *aiyip.*
owl, *kaúh.*
plover, *kárke.*
seal: (1) *korre;* (2) *kowélik;* (3) *áshopen;* (4) male seal, *kétuyétk;* (5) female seal, *kéukenkash.*
tucotuco, *ape.*
unidentified birds: (1) *holq;* (2) *káne;* (3) *kerka;* (4) *kokits;* (5) *kots;* (6) *oklok;* (7) *chip.*
whale, *ochi^{n}.*

DRESS AND ORNAMENT

anklet: (1) of reed, *tai;* (2) of sinew, *chemq.*
headband: (1) warrior's, *gúchilq;* (2) shaman's, *póorrh^{n}.*
leggings, *irsh^{n}kĭŭl.*
moccasin: (1) adult type, *hámni;* (2) child's type, *ónik.*
pubic covering, *skĕ.*
robe, *óli.*
woman's slip, *koi áten.*

[1] Except in cases of *áu*, *aú*, and *aü*, where each of the vowels has its distinct value.

HOUSEHOLD EQUIPMENT

bag: (1) large fox-skin bag, *hási*^{n}; (2) small fox-skin bag, *kólwe;* (3) guanaco-hide bag, *shetelóli;* (4) horse-skin bag, *háchilqin;* (5) water-bag, *sĕ.*
ball, *cháto.*
basket, *tai.* (This word is used for grass, grass-seeds, baskets, and anklets woven of grass.)
carrying harness, *mówi*^{n}.
comb, *ómche.*
cradle, *taaq.*
fire-tongs, *lákel.*
fungus used for tinder, *uo.*
pyrites, *yarr haúk.*
stick: (1) for walking, *na k'léul;* (2) for the windbreak, *léul* or *árrte.*
windbreak, *káwi.*

HUMAN BODY

skull: (1) top of, *áletárrh;* (2) front of, *éyukoq;* (3) zygoma, *kochi;* (4) nasal bone, *orrh.*
jaw, *astilq.*
hair, *áliq.*
ear, *shĕ.*
throat, *échi.*
breast, *charrh.*
ribs, *parrh.*
heart, *toql.*
diaphram, *káich, kéit.*
stomach, *kat.*
collar-bone, *kolchten.*
scapula, *keuq.*
humerus, *áurrh.*
forearm, *marrh.*
wrist-bones, *chinqpaq.*
hand, *chen.*
fingers, *terrh.*
thumb, *terrh k'órrka.*
first finger, *kaüq.*
first and second fingers, *haíyuka.*
third and fourth fingers, *telsheqkan.*
buttock, *owenk, koi.*
leg, *irsh*^{n}.
knee-cap, *kerrén.*
shin, *kochorrh.*

MATERIALS

ashes, *ápel.*
bone, *ko.*
charcoal, *karrh.*
clay, white, *kaístrrh.*
feather, *shitrrh.*
fungus, edible, *yóken.*
grass, *tai.*
guanaco back sinew, *yuh.*
guanaco neck thong, *mun.*
pitch, *tak, tek.*
stone, *yarr.*
tree: (1) *wínshi;* (2) dead standing tree, *gólhe;* (3) dead fallen tree, *áku.* (For special varieties of trees see page 29.)
water, *choon.*

NUMBERS

See page 50.

TOOLS

arrowshaft polisher: (1) of skin, *shoshróshtel, shoshróshtel;* (2) of stone, *ham k'yarr.*
awl, *móoh.*
beater for skins, *árrte kaíyekásh.*
bone chipping tool, *ko heúrrhásh.*
knife, *péye.*
scraper: (1) for hides, *cham;* (2) for wood, *teklek.*
whetstone for chipping tool, *yarr heúrrhásh.*

WEAPONS

arrow, *yah*^{n}.
arrow feather, *sho shitrrh.*
arrowhead, *heúrrh.*
bird-snare, *tíih.* The handle is *láki.*
bow, *ha.*
bowstring, *ha kyuh.*
quiver, *íil.*
seal-net, *sheu.*
sling, *shínkai.*
spear, *chóhi*^{n}.

MISCELLANEOUS

man, *chon.*
woman, *na.*
child, *télken.*
infant, *kaúlqen.*
fire, *haúk.*
flame, *yálue.*
earth, *wuh.*
sky, *sh^{e}o.*
afternoon, *gríngaiírsk.*
sunrise, *makoh.*
rain, *chálo.*
initiation lodge, *hain^{e}.*

YAHGAN VOCABULARY

ANIMALS AND BIRDS

coypu, *saiapaí.*
fish: (1) locally called mullet, *haímush;* (2) locally called sardine, *takápi.*
goose, kelp, *shákush.*
guanaco, *amarapáwa.*
heron, *túwuch.*
porpoise, *shawiano.*

CANOE PARTS AND EQUIPMENT [1]

bark of *Nothofagus betuloides, aíirshun.*
canoe: (1) of bark, *ánan;* (2) of wood, *lapatáganan.*
fireplace, *af.*
gunwale, *wúrri.*
mooring rope, *shukamí.*
mooring thong, *wurrsh.*
paddle, *ápi.*
ribs, *ushkúlakin.*
whalebone, *tirsh.*

DRESS AND ORNAMENT

guanaco-skin cape, *maiáka.*
headband: (1) of heron-feathers, *hapawára* (eastern dialect, *hapawúrrh*); (2) of kelp-goose down, *paqal.*
leggings, *páwa.*
moccasin, *kíli.*
necklace of shell, *opúrrshka.*
pubic covering, *múshwalána.*
wristlet or anklet, *maíamasár.*

HOUSEHOLD EQUIPMENT

basket: (1) hitched coil ("Fuegian" basketry), *tawĕ'la;* (2) twisted hitched coil, *uloánastába;* (3) knotted hitch without foundation, *gaiíchim;* (4) wrapped, *chiwanúsh.*
bucket, *atakála.*
comb, *ushtánim.*
fire-tongs, *láka.*
fungus used as tinder, *awachiq.*
house, *ákharh.*
housetop of seal-hide, *kaíkis.*
pouch: (1) of guanaco-hide for fire-making apparatus, *asánu;* (2) of guanaco-hide for shaman's paraphernalia, *humulúf;* (3) of otter-tail for tobacco, *yeten;* (4) of seal-bladder for oil, *athhlaháni;* (5) of seal throat for paint, *yái;* (6) of seal-gut for oil, *kália.*
pyrites, *s^{e}wálli.*
shell cup, *auflán.*
stick for painting face, *telákikamána.*

MATERIALS

grass, *mápi.*
guanaco-sinew, *ushwámi.*
kelp: (1) ordinary variety, *haúsh;* (2) broad-leafed variety, *shon* (eastern dialect, *shówen*).
moss, *hánakóhl.*
pumice, *hiól.*
seal-hide thong: (1) for joining harpoon-point and shaft, *tamutú;* (2) for circular lashing, *tuwawáru;* (3) for mooring canoes, *wurrsh.*
shell: (1) for drinking-cup, *auflán;* (2) for necklace, *haúsh undálu;* (3) for scraper-blade, *chiamúnka.*
whalebone, *tirsh.*
wood. See Table I, page 29.

[1] See also household equipment, and weapons and hunting equipment.

NUMBERS

See page 121.

TOOLS

awl, *ámi.*
bark remover: (1) for man, *sánakaí;* (2) for woman, *téshupu.*
scraper: (1) of shell, *tuᵘwĕ'na;* (2) of steel, *wána.*
sharpening stone, *chípi.*

WEAPONS AND HUNTING EQUIPMENT

bird-snare, *aúrum.*
club, *kíwa.*
dip-net, *chiwanúsh.*
fish-line, *tápim.* The sinker is *társhir;* the bait noose is *tukaléna.*
harpoon: (1) single-barb type, *awaía* (eastern dialect, *uaía*); (2) double-barb type, *waíki* (eastern dialect, *wek*). The shaft is called *shoshaía;* the thong around the socket is *tuwawáru;* the thong from point to shaft is *támutu.*
harpoon-point case of seal-hide, *yamíku.*
knife (steel), *hárfkar.*
sling, *watewá, mataᵘwá.*
spear: (1) for fish, *shushróya* (eastern dialect, *usháwaia*); (2) double-headed fish-spear, *ámpa, úmpa;* (3) crab-spear, *síta* (the shaft is *akwisimána*); (4) limpet-spear, *kaliáno;* (5) guanaco-spear, *wunaí.*
torch (made of bark of *Nothofagus betuloides*), *aíirshun* (eastern dialect, *aíishu*).

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[This bibliography contains all works to which reference is made in the main text. In addition I have listed all available titles published since 1917 in order to form a supplement to the Bibliography brought out by Cooper in that year. In many cases I have not been able to obtain copies of such recent works and have no knowledge of their contents—S.K.L.]

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